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WATER SUPPLY COMMISSION OF PENNSYLVANIA

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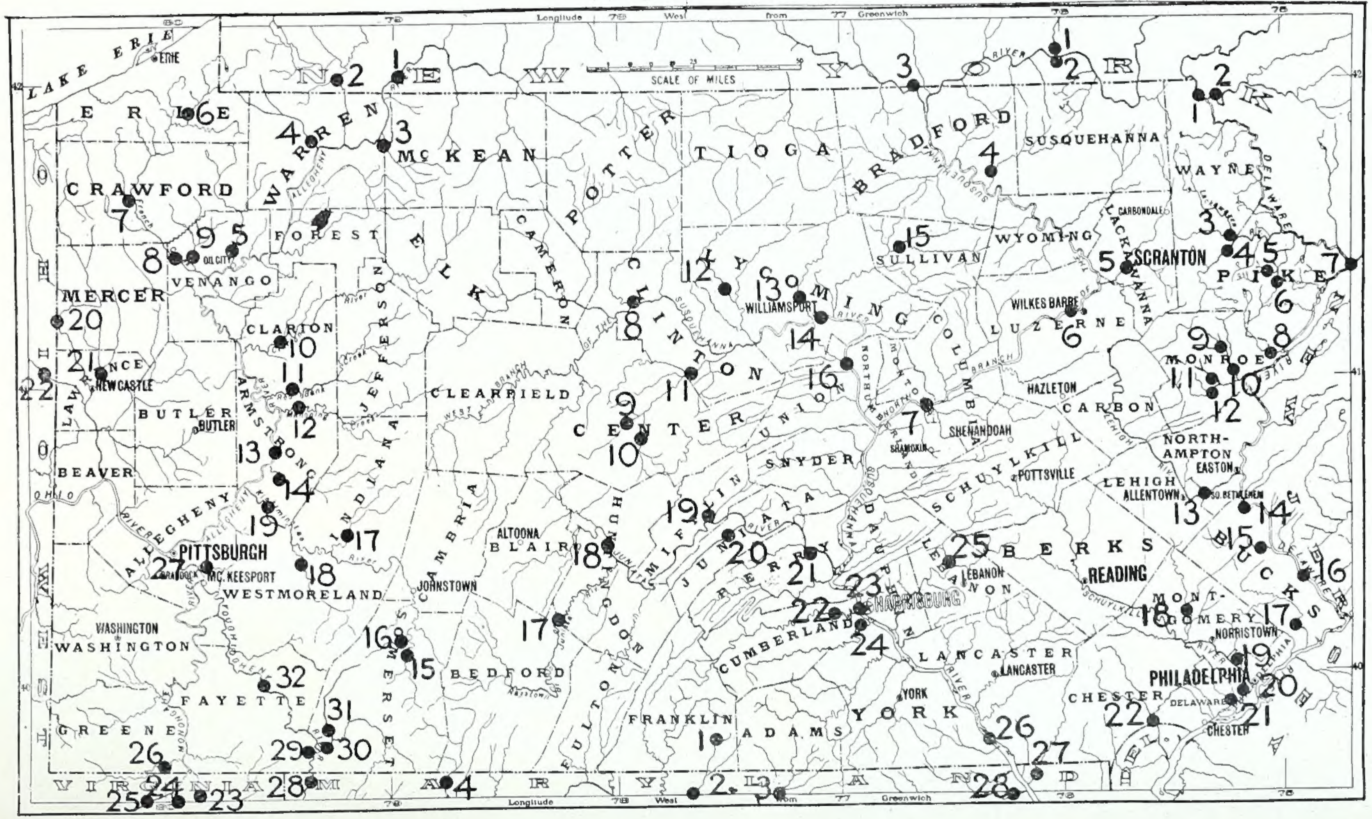

REPORT

OF THE

WATER SUPPLY COMMISSION

OF

PENNSYLVANIA

1910

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1914

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WATER SUPPLY COMMISSION OF PENNSYLVANIA

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REPORT

OF THE

WATER SUPPLY COMMISSION OF PENNSYLVANIA

Office of the Water Supply Commission of Pennsylvania,
Harrisburg, December 31st, 1910.

His Excellency, the Governor of the Commonwealth of Pennsylvania:

The Members of the Senate and the House of Representatives of the Commonwealth of Pennsylvania:

Gentlemen: In compliance with the provisions of the Act of the General Assembly, approved May 4th, 1905, the Water Supply Commission of Pennsylvania respectfully submits its report for the year 1910.

During the year the Commission approved 26 applications for the incorporation of water and water power companies, and one consolidation by purchase of rights and franchises. Table No. 1, exhibits the number of companies incorporated with the approval of the Commission each year since its creation, and the present status thereof:

TABLE No. 1.

Status of Water Companies Incorporated between May 4th, 1905, and January 1st, 1911.

Year.	No. incorporated.	In Operation.		Under Construction.		Not Commenced.	
		No.	Per cent.	No.	Per cent.	No.	Per cent.
1905 (June to Dec.),	6	4	67	0	0	2	33
1906,	30	20	67	2	7	8	26
1907,	33	21	64	2	6	10	30
1908,	20	12	60	3	15	5	25
1909,	38	19	50	5	13	14	37
1910,	26	13	50	3	12	10	38
Totals and equivalent percentage,	153	89	60%	15	9%	49	31.5%

A condition of each charter granted being that work of construction shall begin within two years, the table shows that 25 of the 39 companies chartered between June, 1905, and December, 1908, or 28 per cent, failed to meet their requirement, and have, therefore, lost their charter rights, while 51 per cent of all water companies chartered in the State, including the above, have failed to meet their prescribed duty, indicating a decided improvement in recent years.

To complete to date the list of incorporated and active water companies, and that of merged or consolidated companies, published in preceding reports, tables Nos. 2, 3 and 4 are offered and exhibit data regarding the companies chartered in 1910.

TABLE No. 2.

List of Water and Water Power Companies Incorporated in 1910

Name.	Date of Incorporation.	Territory Covered by Charter.	Present Status.
Arendtsville Water Co.,	April 26, 1910,	Arendtsville Boro., Adams Co.,	Not in operation.
Bentleyville Water Co.,	June 20, 1910,	Bentleyville Boro., Washington Co.,	Not in operation.
Butler Township Water Co.,	August 23, 1910,	Butler Township, Schuylkill Co.,	Not in operation.
Conewago Township Water Co.,	December 6, 1910,	Conewago Township, Adams Co.,	Active.
Green Hill Water Co.,	November 1, 1910,	Logan Township, Blair Co.,	Active.
Hazle Township Water Co.,	April 28, 1910,	Hazle Township, Luzerne Co.,	Active.
Heidelburg Township Water Co.,	February 2, 1910,	Schaefferstown Village, Lebanon Co.,	Active.
Jonestown Water Supply Co.,	April 26, 1910,	Jonestown Boro., Lebanon Co.,	Sold to Lebanon Valley Cons. Water Co.
Koppel Water Co.,	December 29, 1910,	Koppel Village, Beaver Co.,	Not in operation.
Kulpmont Water Co.,	November 1, 1910,	Kulpmont Village, Northumberland Co.,	Active.
Mokoma Spring Water Co.,	October 4, 1910,	Laporte Boro., Sullivan Co.,	Active.
Palmer Township Water Co.,	March 29, 1910,	Palmer Township, Northampton Co.,	Not in operation.
Paupack Power Co.,	October 4, 1910,		Not in operation.
Penn Township Water Co. of York Co.,	December 6, 1910,	Penn Township Water Co. of York Co.,	Active.
Pleasant Gap Water Supply Co.,	June 20, 1910,	Pleasant Gap Village, Centre Co.,	Not in operation.
Pompeii Water Co.,	February 2, 1910,	Washington Township, Northampton Co.,	Not in operation.
Port Royal Water Supply Co.,	August 23, 1910,	Port Royal Boro., Juniata Co.,	Active.
Reliance Water Co.,	November 1, 1910,	Franconia Township, Montgomery Co.,	Not in operation.
Ringtown Spring Water Supply Co.,	April 26, 1910,	Ringtown Boro., Schuylkill Co.,	Active.
Roselawn Water Co.,	August 23, 1910,	Part of Logan Township, Blair Co.,	Active.
Sewickley Water Co.,	April 26, 1910,	Mt. Pleasant Township, Westmoreland Co.,	Not in operation.
Telford Water Co.,	November 1, 1910,	West Telford Boro., Montgomery Co.,	Active.
Three Springs Water Co.,	December 13, 1910,	Three Springs Boro., Huntingdon Co.,	Active.
Walnut Grove Water Supply Co.,	August 23, 1910,	Stony Creek Township, Cambria Co.,	Active.
West Easton Water Co.,	March 29, 1910,	West Easton Boro., Northampton Co.,	Not in operation.
West Shore Water Co.,	February 2, 1910,	East Pennsboro Township, Cumberland Co.,	Not in operation.

TABLE No. 3.

Active Water Companies Incorporated in 1910.

(Included in Table No. 2)

Name.	Supplies.	Source of Supply.	System of Supply.
Conewago Township Water Co.,	Conewago Twp., Adams Co.,	System of Hanover and McSherrystown Water Co.,	Gravity.
Green Hill Water Co.,	Suburb of Altoona, Blair Co.,	Drilled well,	Pumping.
Hazle Township Water Co.,	Hazle Township, Luzerne Co.,	Cross run and drilled well,	Pumping.
Heidelburg Township Water Co.,	Schaefferstown, Lebanon Co.,	Springs,	Gravity.
Kulpmont Water Co.,	Kulpmont, Northumberland Co.,	Buy water from Bear Gap Water Co.,	Gravity.
Mokoma Springs Water Co.,	Laporte Boro., Sullivan Co.,	Spring,	Pumping.
Penn Township Water Co. of York Co.,	Penn Township, York Co.,	System of Hanover and McSherrystown Water Co.,	Gravity.
Port Royal Water Supply Co.,	Port Royal Boro., Juniata Co.,	Springs,	Gravity.
Ringtown Spring Water Supply Co.,	Ringtown Boro., Schuylkill Co.,	Drilled well,	Pumping.
Roselawn Water Co.,	Suburb of Altoona, Blair Co.,	Drilled well,	Pumping.
Telford Water Co.,	West Telford Boro., Montgomery Co.,	Drilled well,	Pumping.
Three Springs Water Co.,	Three Springs, Huntingdon Co.,	Springs,	Gravity.
Walnut Grove Water Co.,	Walnut Grove, Cambria Co.,	Springs,	Gravity.

TABLE No. 4.

Consolidation of Water Companies by Purchase of Property and Franchises in 1910.

Holding Company.		Purchased Companies.		
Name.	Incorporated For.	Name.	Incorporated For.	Date of Purchase.
Moreland Spring Water Co.,	Moreland Township, Montgomery Co.	Ogontz Water Co.,	Cheltenham Township, Montgomery Co.	February 24, 1910.
		Welden Water Co.,	Abington Township, Montgomery Co.	February 24, 1910.

Under the Act of May 28th, 1907, the Commission approved 32 applications for encroachments upon or obstructions in streams during 1910. The question of clearance above maximum floods has received careful attention in passing upon applications for permits to construct bridges over large rivers, although some applicants claimed that it was a hardship to be required to raise the structures above extreme high water line. But the Act of June 3, 1895, which provides for the payment by the State of the cost of reconstructing all county bridges destroyed by flood, is a sufficient reason for this requirement in the case of county bridges, while the possibility of damage to structures below other bridges also warrants such precautionary measure.

The system of stream gagings has been maintained and enlarged, 6 new stations having been added during the year, making a total of 75 from which the Commission receives daily reports. Most of the stations installed have been definitely rated and it is practicable to furnish the daily discharge of the streams of which records are available, to aid in determining the most advantageous method of utilization or improvement.

Respectfully submitted,
JOHN BIRKINBINE,
Chairman.
FREDERIC W. FLEITZ,
THOMAS J. LYNCH,
SAMUEL G. DIXON,
Commissioner of Health.
ROBERT S. CONKLIN,
Commissioner of Forestry.

REPORT

OF THE

WATER SUPPLY COMMISSION OF PENNSYLVANIA

FOR

1911

WATER SUPPLY COMMISSION OF PENNSYLVANIA

CHAIRMAN.

JOHN BIRKINBINE, Cynwyd, Montgomey county.

VICE CHAIRMAN

FREDERIC W. FLEITZ, Scranton, Lackawanna county.

SECRETARY.

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R. A. BOEHRINGER, Reading, Berks county.

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JOHN D. RECKORD, Harrisburg, Dauphin county.

TABLE OF CONTENTS

Page.

Letter of Transmittal, ... 21

Water Power, ... 25

Encroachments, ... 26

Pymatuning Swamp, ... 27

Austin Dam Failure, ... 28

Dam Investigations, ... 32

Flood Prevention, ... 33

Defunct Water Charters, ... 33

Recommendations, ... 34

Chapter I.

Discharge of Pennsylvania streams, ... 37

Introduction, ... 37

Influences Controlling Run-off, ... 43

Appendix.

Stream Flow Data:

Delaware Basin, ... 1

Susquehanna Basin, ... 259

Potomac Basin, ... 587

Ohio Basin, ... 641

VIRTUE LIBERTY AND INDEPENDENCE

LIST OF TABLES

Table No. Page.

1—Status of Water Companies Incorporated between May 4, 1905 and January 1, 1912, ... 22

2—Water Companies Incorporated in 1911, ... 23

3—Active Water Companies Incorporated in 1911, ... 24

4—Consolidation of Water Companies by Merger in 1911, ... 24

5—Gaging Stations in Delaware Basin, ... 39

6—Gaging Stations in Susquehanna Basin, ... 40

7—Gaging Stations in Potomac Basin, ... 41

8—Gaging Stations in Ohio Basin, ... 42

LIST OF ILLUSTRATIONS

Page.

Frontispiece—Map showing location of stream gaging stations.

1.—Diagram showing number of Water and Water Power Companies incorporated each year, ... 22

2.—Water Power Plant of the Pennsylvania Water and Water Power Company, at Holtwood, on the Lower Susquehanna River, ... 25

3.—Water Power Plant of the Penn Central Power Company, above Huntingdon, on the Juniata river, ... 26

4.—Obstruction of river channel by bridge piers, ... 26

5.—Railroad embankment encroaching on stream, ... 26

6.—Small stream obstructed by building, ... 27

7.—Small stream walled in and being cleaned out, ... 28

8.—Sketch Plan of Demolished Austin Dam, ... 31

APPENDIX.

9.—Gaging Station on Rattlesnake Brook, Pike County, ... 33

10.—Gaging Station on Big Bushkill Creek, at Shoemakers, Monroe County, ... 48

11.—Gaging Station on North Branch of Susquehanna river, at Wilkes-Barre, ... 336

12.—Gaging Station on Bald Eagle Creek, at Milesburg, Centre County, ... 384

13.—Gaging Station on West Branch of Susquehanna River, at Williamsport, ... 411

14.—Gage on Frankstown Branch, Juniata River, at Huntingdon, .. 455

15.—Gaging Station on Conodoguinet Creek, near Harrisburg, ... 506

16.—Clarion River below Gaging Station, ... 709

17.—Gaging Weir over Quemahoning Creek, above Johnstown, ... 744

REPORT

OF THE

WATER SUPPLY COMMISSION OF PENNSYLVANIA

Office of the Water Supply Commission of Pennsylvania,
Harrisburg, December 31st, 1911.

His Excellency, the Governor of the Commonwealth of Pennsylvania:

The members of the Senate and the House of Representatives of the Commonwealth of Pennsylvania:

Gentlemen: In compliance with the provisions of the Act of the General Assembly, approved May 4th, 1905, the Water Supply Commission of Pennsylvania respectfully submits its report for the year 1911.

During the year 24 applications for the incorporation of water companies, three for the incorporation of water power companies, and one consolidation by merger have received the approval of the Commission.

Table No. 1 indicates the present condition of all companies incorporated with the approval of the Commission, and shows surprising uniformity in the percentage each year which availed themselves of the privileges granted them. Omitting those incorporated in 1911, which have not had time to begin operations, it is seen by the last column in the table that the percentage of the companies formed each year which are not operating varies from 27 to 33 per cent.

TABLE No. 1.

Status of Water Companies Incorporated between May 4th, 1905, and January 1st, 1912.

Year.	Number incorporated	In Operation.		Under Construction.		Not Operating.	
		No.	Per cent.	No.	Per cent.	No.	Per cent.
1905 (6 months), ...	6	4	67	0	0	2	33
1906, ...	30	21	70	1	3	8	27
1907, ...	33	21	64	3	9	9	27
1908, ...	20	12	60	2	10	6	28
1909, ...	38	24	63	2	5	12	32
1910, ...	26	17	65	2	8	7	27
1911, ...	28	12	43	5	18	11	39
Totals and equivalent percentages, ...	181	111	61%	15	8%	55	31%

Figure No. 1 shows in diagramatic form the number of water companies incorporated each year, and illustrates the reduction in the rate of incorporation of water companies effected by the investigations of the Commission.

Below are lists of, Table No. 2, water companies and water power companies incorporated in 1911; Table No. 3, those companies in the above list which are operating, giving source of supply and character of works; and Table No. 4, the consolidations affected during 1911.

TABLE No. 2.
Water Companies Incorporated in 1911.

Name of Company.	Date of Incorporation.	Territory Covered.	Present Status.
Allison Park Water Co.,	January 23, 1911,	Hampton Township, Allegheny County,	Active.
Citizens Water Co. of Cecil Township,	October 9, 1911,	Cecil Township, Washington County,	Not in operation.
Citizens Water Co. of Mt. Pleasant Township,	October 9, 1911,	Mt. Pleasant Township, Washington County,	Not in operation.
Citizens Water Co. of North Fayette Township,	October 9, 1911,	North Fayette Township, Allegheny County,	Not in operation.
Citizens Water Co. of Robison Township,	October 9, 1911,	Robison Township, Washington County,	Not in operation.
Citizens Water Co. of South Fayette Township,	October 9, 1911,	South Fayette Township, Allegheny County,	Not in operation.
Citizens Water Co. of Smith Township,	October 9, 1911,	Smith Township, Washington County,	Not in operation.
Citizens Water Power Co.,	July 6, 1911,	Lycoming County, Pennsylvania,	Not in operation.
Cressona Water Co.,	November 6, 1911,	Cressona Borough, Schuylkill County,	Active.
Deep Well Water Co.,	July 20, 1911,	Hazle Township, Luzerne County,	Active.
Dickerson Run Water Co.,	April 5, 1911,	New Dickerson Run Village, Fayette County,	Not in operation.
Evitts Creek Water Co.,	September 8, 1911,	Cumberland Valley Township, Bedford County,	Not in operation.
Florin Water Co.,	September 12, 1911,	Mt. Joy Township, Lancaster Co.,	Active.
Hillside Water Co.,	September 12, 1911,	Upper Turkey Foot Township, Somerset County,	Not in operation.
Hilltown Water Co.,	May 2, 1911,	Hilltown Township, Bucks County,	Merged in Telford Water Co.
Hop Bottom Water Co.,	September 12, 1911,	Hop Bottom Borough, Susquehanna County,	Not in operation.
Lehman Water Co.,	November 6, 1911,	Lehman Township, Pike County,	Active.
Lenni Heights Water Co.,	August 30, 1911,	Middletown Township, Delaware County,	Not in operation.
Londonderry Water Co.,	December 2, 1911,	Palmyra Village, Lebanon County,	Active.
Lower Gwynedd Water Co.,	May 2, 1911,	Lower Gwynedd Township, Montgomery County,	Active.
Marion Center Water Co.,	December 2, 1911,	Marion Center Borough, Indiana County,	Active.
Ohio Pyle Falls Development Co.,	February 1, 1911,	Fayette County,	Not in operation.
Red Hill Water Co.,	April 1, 1911,	Red Hill Borough, Montgomery County,	Not in operation.
Rockhill Water Co.,	May 2, 1911,	Telford Borough, Bucks County,	Merged in Telford Water Co.
Smithton Water Co.,	June 27, 1911,	Smithton Borough, Westmoreland County,	Not in operation.
Telford Water Co.,	September 12, 1911,	Merger-Bucks and Montgomery Counties,	Active.
Wallenpaupack Power Co.,	June 27, 1911,	Palmyra Township, Pike County,	Not in operation.
Wayne Water Co.,	November 6, 1911,	North Manheim Township, Schuylkill County,	Active.

TABLE No 3.

Active Water Companies Incorporated in 1911.

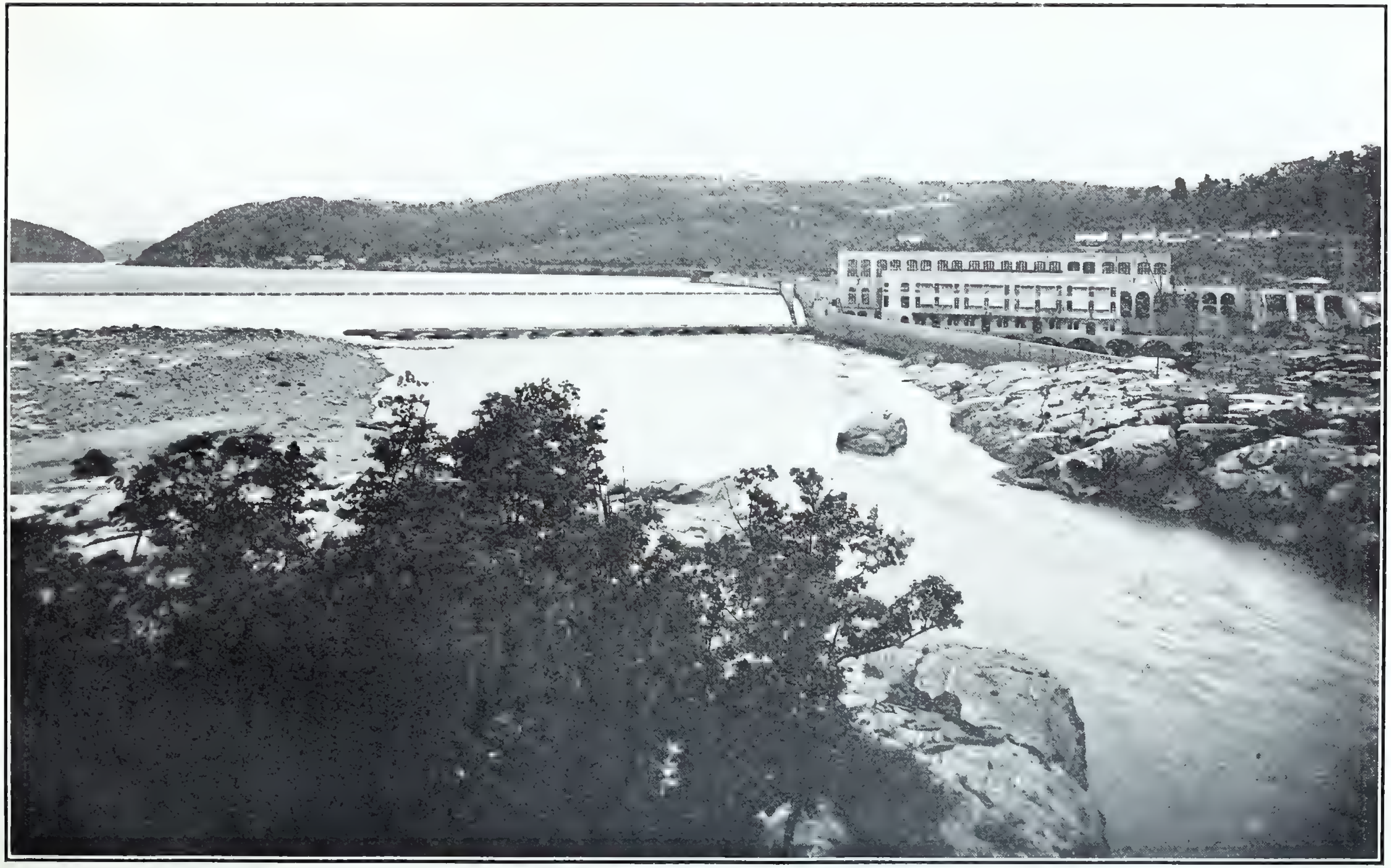
(Included in Table No. 2.)

Name.	Supplies.	Source of Supply.	System of Supply.
Allison Park Water Co.,	Allison Park, Allegheny Co.,	Drilled well,	Pumping.
Cressona Water Co.,	Cressona Boro., Schuylkill Co.,	Hummel Hollow and Panther Valley stream,	Gravity.
Deep Well Water Co.,	Hazle Township, Luzerne Co.,	Grape run and drilled wells,	Pumping.
Florin Water Co.,	Florin, Lancaster Co.,	Drilled well,	Pumping.
Lehman Water Co.,	Bushkill, Pike Co.,	Peters & Smiths springs,	Gravity
Londonderry Water Co.,	Palmyra, Lebanon Co.,	Springs and drilled wells,	Gravity and pumping.
Lower Gwynedd Water Co.,	Lower Gwynedd Township, Montgomery Co.	Purchase water from North Wales Water Co.,	Pumping.
Marion Center Water Co.,	Marion Center, Indiana Co.,	Spring,	Gravity.
Telford Water Co.,	West Telford Boro., Montgomery Co.,	Drilled well,	Pumping.
Wayne Water Co.,	North Manheim Township, Schuylkill Co.,	Hummel Hollow and Panther Valley stream,	Gravity.

TABLE No. 4.

Consolidation of Water Companies by Merger in 1911.

Holding Company.		Constituent Companies.		
Name.	Incorporated For.	Name.	Incorporated for.	Date of Merger.
Telford Water Co.,	Bucks and Montgomery Counties,	Hilltown Water Co.,	Hilltown Twp., Bucks Co.,	September 12, 1911.
		Reliance Water Co.,	Franconia Township, Montgomery Co.	September 12, 1911.
		Rockhill Water Co.,	Telford Boro., Bucks Co.,	September 12, 1911.
		Telford Water Co.,	West Telford Boro., Montgomery Co.	September 12, 1911.



Water Power Plant of the Pennsylvania Water and Water Power Company, at Holtwood, on the Lower Susquehanna.

WATER POWER.

Although there is in the State a growing interest in water power development, there are but three large modern hydro-electric plants operating on Pennsylvania streams, which are equipped with turbines having a total of approximately 65,000 rated horsepower. There are now pending before the Commission applications for the incorporation of water power companies whose plan called for the installation of a total of approximately 300,000 rated horsepower, all being dependent upon extensive storage reservoirs, one scheme contemplating complete utilization of the run-off from two watersheds whose aggregate drainage area is approximately 2,000 square miles. Much benefit to the regimen of the rivers which are developed and those into which they flow should result from such regulations of discharge; thus the minimum flow of the Allegheny river at Pittsburgh could be increased over 200 per cent. by proper regulation of the storage reservoirs contemplated by the proposed developments by water power companies on tributaries of this stream. Such an increase would improve navigation and sanitary conditions, while the floods from the developed tributaries would be practically excluded from the Allegheny river, if the reservoirs were properly designed and operated. The Commission is of the opinion that the utilization of streams for the generation of water power and for all other purposes, should be controlled by the State and that changes should be made in legislation to permit the development of water resources, either by the State itself or by corporations operating under the regulation and control of the State. Where the water resource is used as a public utility by an individual or private corporation, there should be some revenue from its use received by the State.

Under present conditions there is little inducement for corporations to build reservoirs merely for storage because there is no way of obtaining a commensurate revenue from the necessarily large investment. If, however, the impounding reservoir owner had the right to charge for excess water which was stored and released for use, this would be a possible source of revenue, for as storage was affected, and the stream flow regulated, users would appear and power plants be built upon streams benefited. There are few streams in Pennsylvania now, where water power plants are so numerous and use water under sufficient total head to make storage for regulation of the lower river pay, but as the number of plants and the total head at which the flow is utilized increases reservoir sites may pay for development, and as they are built and the flow regulated more power plants may be anticipated. At some sites it is possible that power plants erected at the storage dams would assist the economic success of the storage.

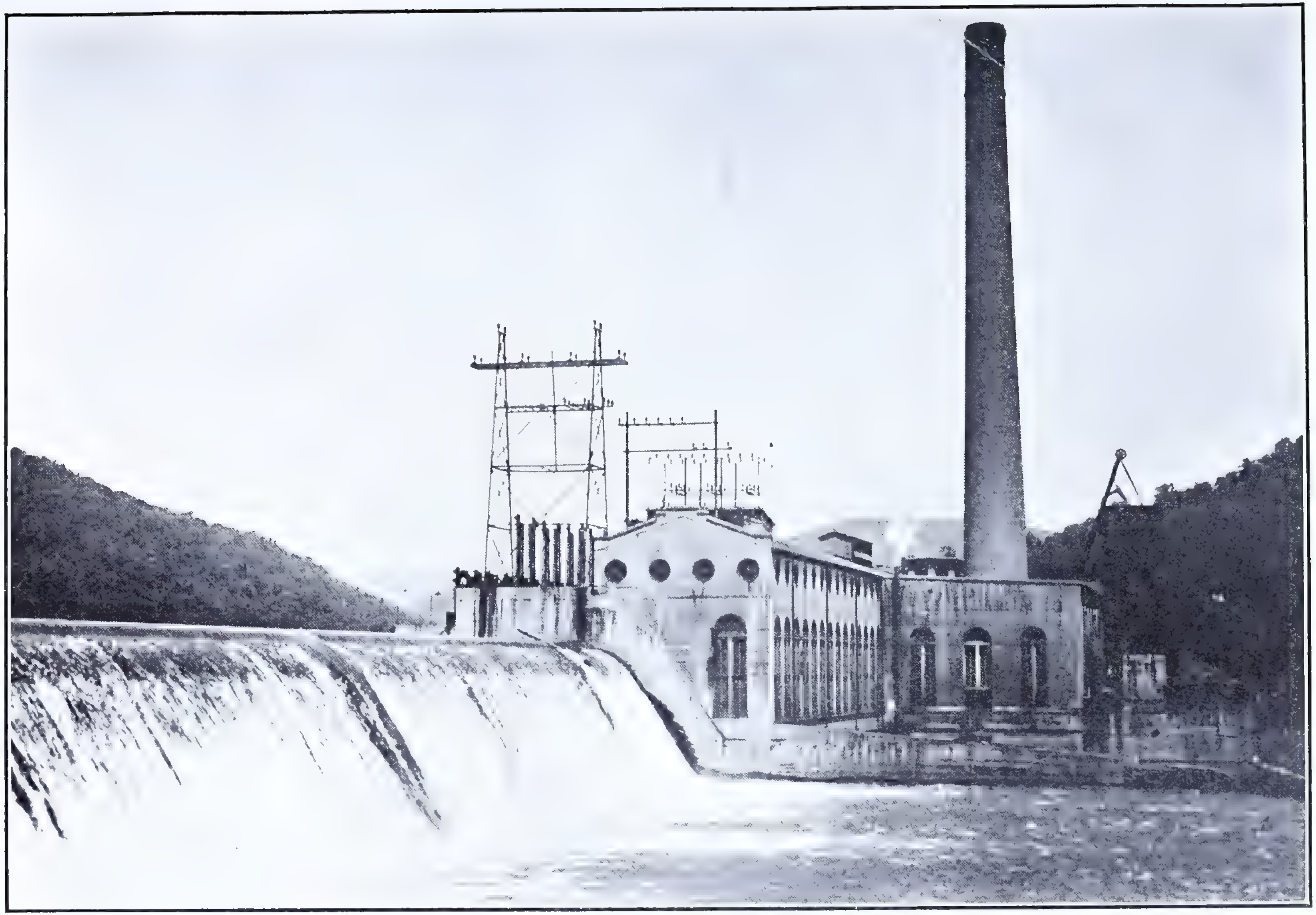
It is apparent that either the State must build the reservoirs and adjust proportionate charges for benefits conferred and enforce payment thereof, or permit the corporation or individual to lease the privileges under terms whereby the State maintains its control of the operation. It is beyond the power of the Legislature to enact laws to permit this to be done now, a change in the Constitution must first be made.

A large water power plant, recently completed and placed in operation on the lower Susquehanna river, is dependent upon the unregulated flow of the river and its owners are desirous of constructing storage reservoirs to aid the dry weather flow, and be benefited through the conservation of freshet water for use when needed. Water stored on streams in this State, however, and let out in dry seasons may, as the statutes now read, be used by all riparian owners below without compensation to the parties who have effected the storage. We believe that this condition may and should be remedied either by; 1st, the State building the storage reservoirs, charging power owners for the stored water used or; 2nd, by laws enacted permitting private corporations to erect such works, under proper authorization, and charge for the stored water as it is released and applied. By enacting well considered legislation along either of these lines which will provide revenue for the State, an important step would be taken toward the conservation and full utilization of the water supply.

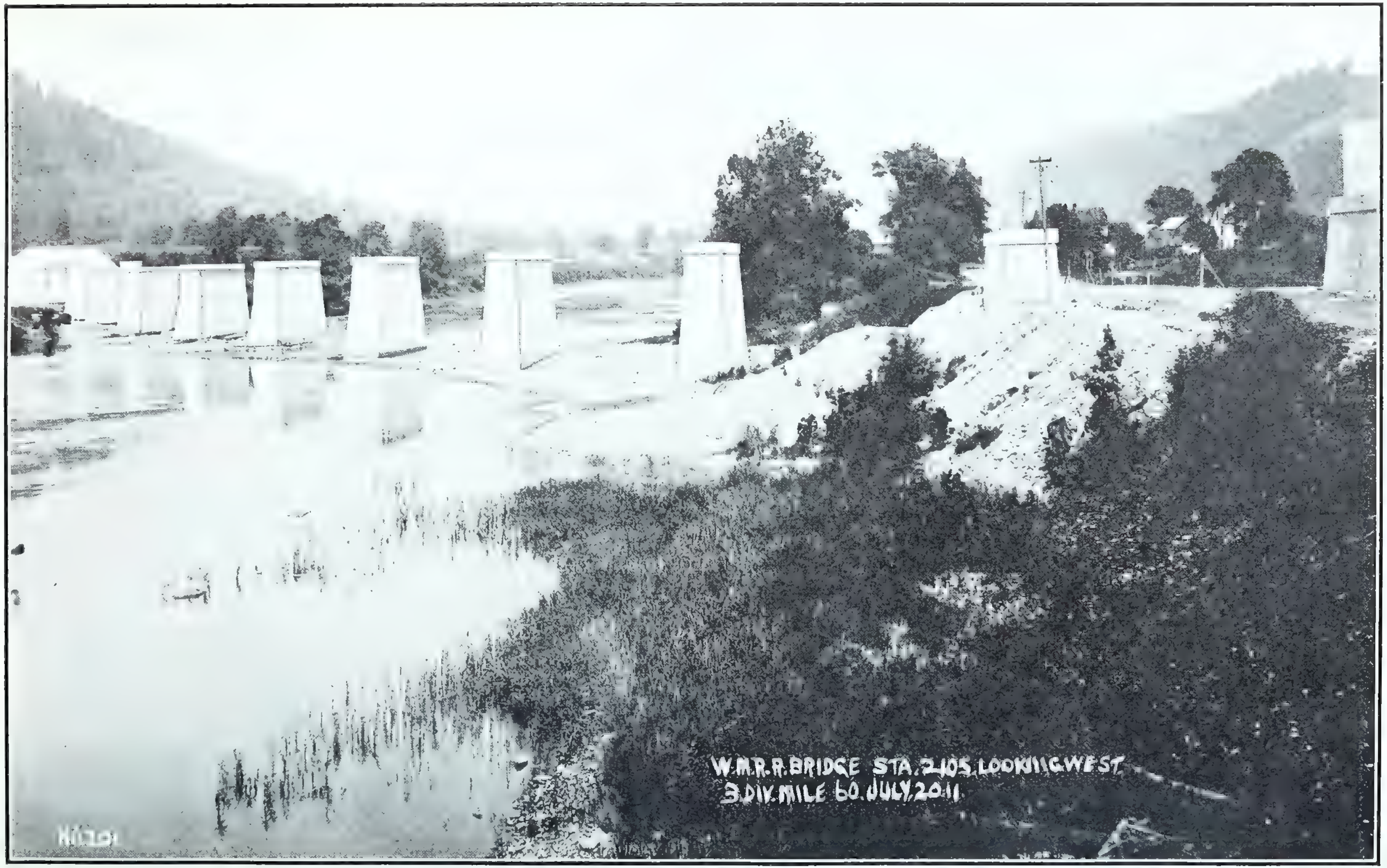
ENCROACHMENTS.

The attention required for investigating encroachments and obstructions to streams has increased with the number of such applications coming before the Commission. In the year 1908, 19 applications were approved, while the numbers were in 1909, 27; in 1910, 32; and in 1911, 32. During 1911 the office and field work demanded by such applications has exceeded that required by applications for the incorporation of water and water power companies.

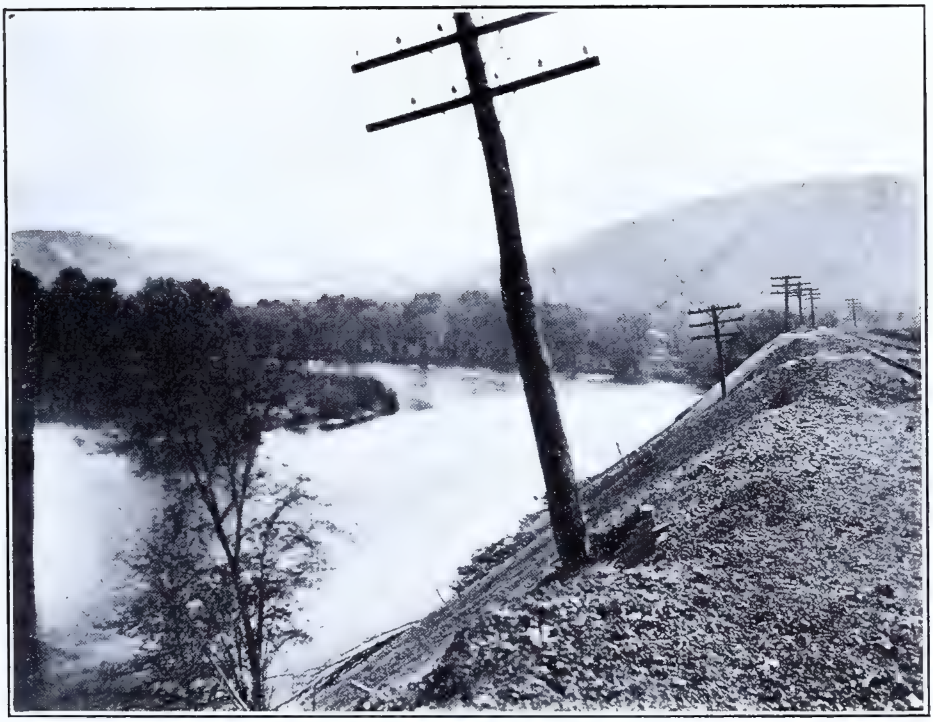
The Act of May 28th, 1907, under which the Commission controls encroachments in or along streams, provides only for certain classes of streams, and the Commission has found that this is apparently understood to exclude from its jurisdiction numerous water courses upon which encroachments have been or are being made, some of which are detrimental to the streams themselves as well as to the larger water courses into which these flow. Such works have been and are being carried on without the necessity of approval of this Department, and contrary, in some cases, to the standards and requirements set in similar works constructed on streams that are under our jurisdiction. In order that the streams of the Commonwealth may be more thoroughly protected, it is the opinion of the Commission that embankments, waste dumps, and encroachments of all kinds, other than petty ones, on any stream should be prohibited unless sanctioned by the Commission or be subject to removal if found



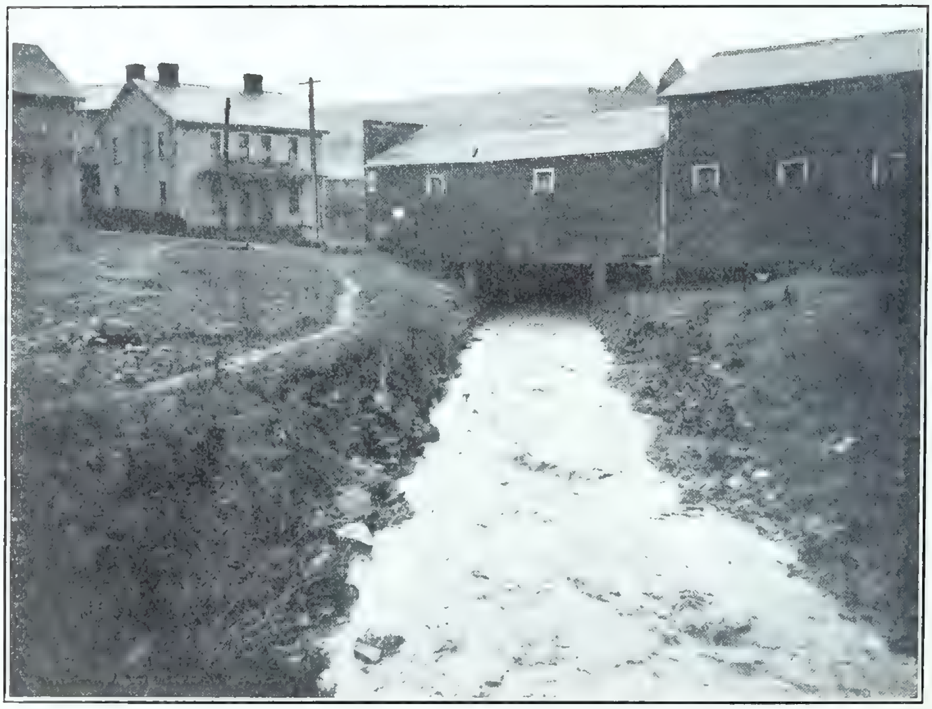
Water Power Plant of the Penn Central Power Company above Huntingdon, on the Juniata River


W.M.R.R. BRIDGE STA. 2105 LOOKING WEST
3 DIV. MILE 60. JULY 20.11

Obstruction of River Channel by Bridge Piers



Railroad Embankment Encroaching on Stream.



Small Stream Obstructed by Building.

by the Commission to be prejudicial to life or security of property at points both above and below such embankments, waste dumps and encroachments. We recommend the amendment of the above act to this effect.

The majority of the applications under this act come from the railroad companies, and cover bridges and embankments, for steel bridges require regular renewals, and the tendency is to replace truss bridges with masonry arches or plate girder structures. Either of these classes of bridges, when replacing a truss structure, requires changes in the piers, and consequently alteration in waterways. The tendency of railroad companies is to increase the clear waterway under reconstructed bridges by raising the structures or increasing the span or both, and we have seldom been called upon to pass upon the rebuilding of a railroad bridge, where the new structure does not show an opening at least equivalent to that of the old.

Several of the larger railroads are increasing their trackage, thus the Lehigh Valley Railroad is four-tracking its line along the Lehigh river, and the Allegheny Valley Division of the Pennsylvania Railroad is being double-tracked along the Allegheny river, while extensive alterations and increase of track facilities are being made by other roads. As most railroads follow valleys of streams, and often for many miles are located immediately on the river bank, any increase in trackage is generally most economically made by filling into the stream, but it is only possible to permit this where the river is sufficiently wide to carry the greatest floods, and if the slopes are riprapped. At other points concrete retaining walls have been required along or near the foot of the bank and the desired width obtained by filling in behind the walls.

PYMATUNING SWAMP SURVEY.

The Legislature of 1911 passed an Act dated June 14, 1911, directing the Water Supply Commission of Pennsylvania to cause a survey to be made of Pymatuning Swamp, Crawford county, to determine the feasibility of constructing a storage reservoir therein for the regulation of the flow of the Shenango river, into which it drains, and of the Beaver river, to which the Shenango is tributary.

The Shenango Valley has been subject to frequent inundation by floods in the river, while in dry seasons, owing to the large consumption of water by municipalities and industries, the supply is insufficient and the larger plants, among them some of the steel works, which employ thousands of operators, have had to close partially or completely for considerable periods.

Water powers on the Beaver river once in flourishing condition have largely fallen into disuse, owing to the small dry weather flow, while sites which might be valuable for development along the Shenango are not utilized. Furthermore, the dense population and numerous industries situated along this stream render the condition of water exceedingly unsanitary and undesirable when the flow is small.

If large storage can be effected at a reasonable cost, it is expected that floods may be noticeably reduced, and the dry weather flow increased from 10 to 20 times, affording ample water of a better quality for all purposes.

The Legislature having appropriated $10,000 with which to make surveys and prepare maps, plans and reports, much information has been collected regarding rainfall, stream flow, amount of water required, flood damage, etc., and a field party is being organized with the expectation that work will be started about the middle of January, 1912.

THE AUSTIN DAM FAILURE.

In the report of the Commission for 1908 is a description of failure of the South Fork Dam, which resulted in a high toll of dea at Johnstown in June, 1889. On September 30th, 1911, occurred th failure of a masonry dam at Austin, Potter county, which resulted in the loss of 87 lives and the obliteration of most of a borough o some 2,000 population. The Johnstown catastrophe was not followe by the remedial legislation which should have been enacted, and advise that the Legislature take steps to prevent the recurrence such tragedies.

The Commission's Engineer was at Austin the morning following the failure of the dam and all the members of the Commission subsequently visited the site.

The borough of Austin lies at the junction of Freeman's run, a tributary of the First Fork of the Sinnemahoning creek, and the West Branch of Freeman's run, in Potter county, its population in 1910 having been 2,941, and the town of Costello, population of 500, is at the junction of Freeman's run, and the Sinnemahoning, three miles below Austin. One-half mile above Austin, in the valley of Freeman's run, is the plant of the Bayless Pulp and Paper Company, which obtained its water from this run by impounding it in a storage reservoir of approximately 350,000,000 gallons capacity about three-fourths of a mile up this valley. The construction of the dam which formed this reservoir was begun in May and completed in November, 1909, replacing a much smaller crib structure a few hundred feet above.

This new dam, formed of boulder concrete, was approximately 550 feet long on top and of a maximum height of 50 feet. Its top width was 30 inches and maximum width at base 30 feet, the upstream face being vertical. The spillway, which was in the center, was 40 feet long and 30 inches deep. The dam contained 16,000 cubic-yards of concrete and cost about $75,000.

Small Stream Walled in and Being Cleaned Out.

Below the dam the valley follows a straight line to Austin, about one and one-fourth miles distant, descending some 15 feet in that distance, and being from 600 to 1,000 feet in width, with steep and barren hillsides. The method of construction was described by the Engineer who designed the dam in Engineering News of March 17th, 1910, as follows:

"The entire valley is underlain with sandstone rock in horizontal layers running from 8 inches to 3 feet thick. Between these layers beds of shale and disintegrated sandstone were located, but there were very few vertical cracks to be observed in the bed of the rock. Upon the surface of the rock there was 5 to 8 feet of earth and compacted gravel deposited from the washings of the side hills. This was so well cemented together that it was removed with the utmost difficulty, and but little water filtered through it into the foundation trench during construction.

In preparing the foundation, all loose rock was removed and the concrete only started after a solid stratum of at least 2 feet thick was encountered. The surface of the rock was well washed and grouted. A cut-off wall 4 feet thick and 4 feet deep was built, and in every case this cut-off wall was carried down to good rock. In order to reinforce the dam, twisted rods 1¼ inches in diameter and 25 feet long were built into the wall vertically 5 feet inside of the upstream face. Holes were drilled into the foundation rock from 5 to 8 feet deep, and 2.66 feet between centers, and the steel rods with expansion bolt heads were placed into these holes, which were then grouted.

Upon each side of the spillway a pilaster was built, which was reinforced by ½ inch steel rods to prevent cracking. The top 12 feet of the dam was reinforced with ½ inch steel rods spaced 2 feet vertically and 4 feet horizontally to prevent cracking. Against the upstream face of the dam an earth embankment was laid to a slope of 3 to 1, which reached to within 27 feet of the normal water level at the upstream face of the dam. This embankment was composed of disintegrated shale, clay and some loam, free from large stones, and was carefully compacted by grooved rollers in 6 to 8 inch layers, the work being carefully and well done.

The dam was composed of Cyclopean concrete, with large quarry stones, from ½ to 2 cubic yards size, embedded firmly in wet concrete. These stones were placed so as to break joints, both as headers and stretchers, and surrounded with not less than 6 inches of concrete, generally much more. In every case the concrete was built in sections, stepped up, and the steps dove-tailed both horizontally and vertically. In building into the side hills great care was used in getting down to good firm rock foundation before any concrete was laid.

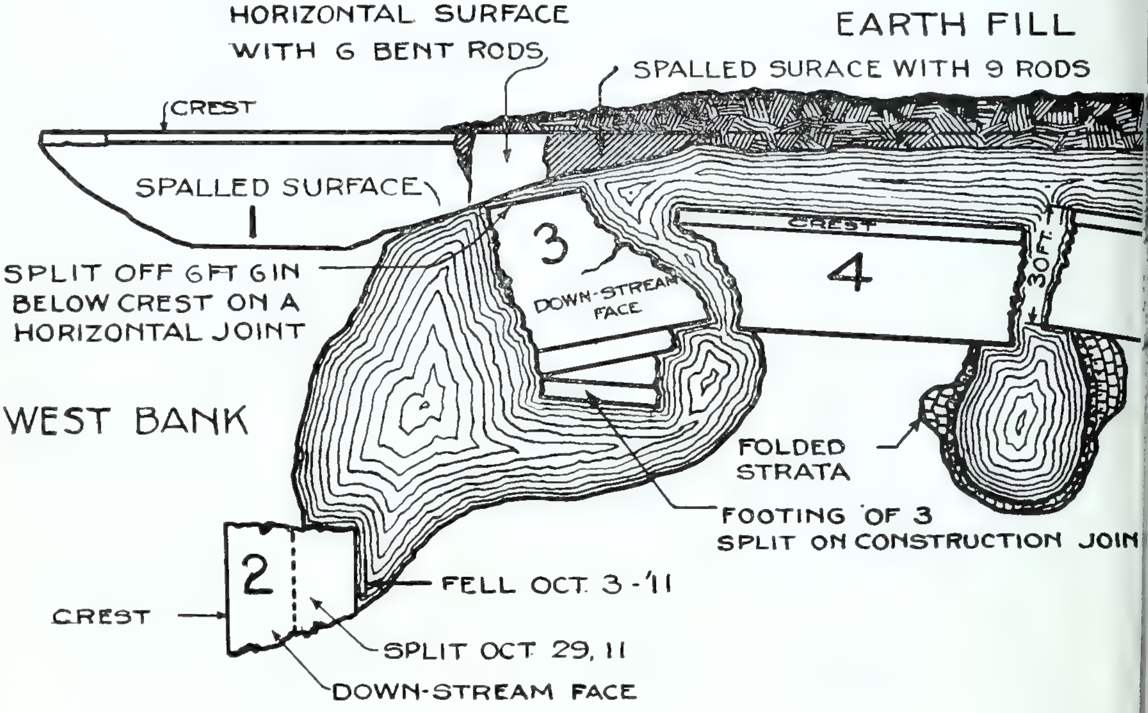
The material for building the dam was secured from quarries opened at either end of the dam, where duplicate crushers and mixing plants were located. The sand was secured by crushing the sandstone with rolls and screening through sand pans. The composition of the concrete was one part Portland cement, three parts of sand, and six parts of broken stone. Each shipment of cement, as received, was tested upon the works by the resident engineer, who also made numerous tests to ascertain the difference between the tensile strength when using washed bar sand and the sand secured from crushing stone. In every case the mixture containing the sand from the crushed stone gave greater tensile strength.

The concrete was handled in two ways. At the two ends it was run down chutes upon the dam, and there shoveled into place. In the middle of the valley the cableway stretched across the valley carried the concrete in buckets to the wall, where it was shoveled into place. In every case it was well turned over and mixed after leaving the mechanical mixer.''

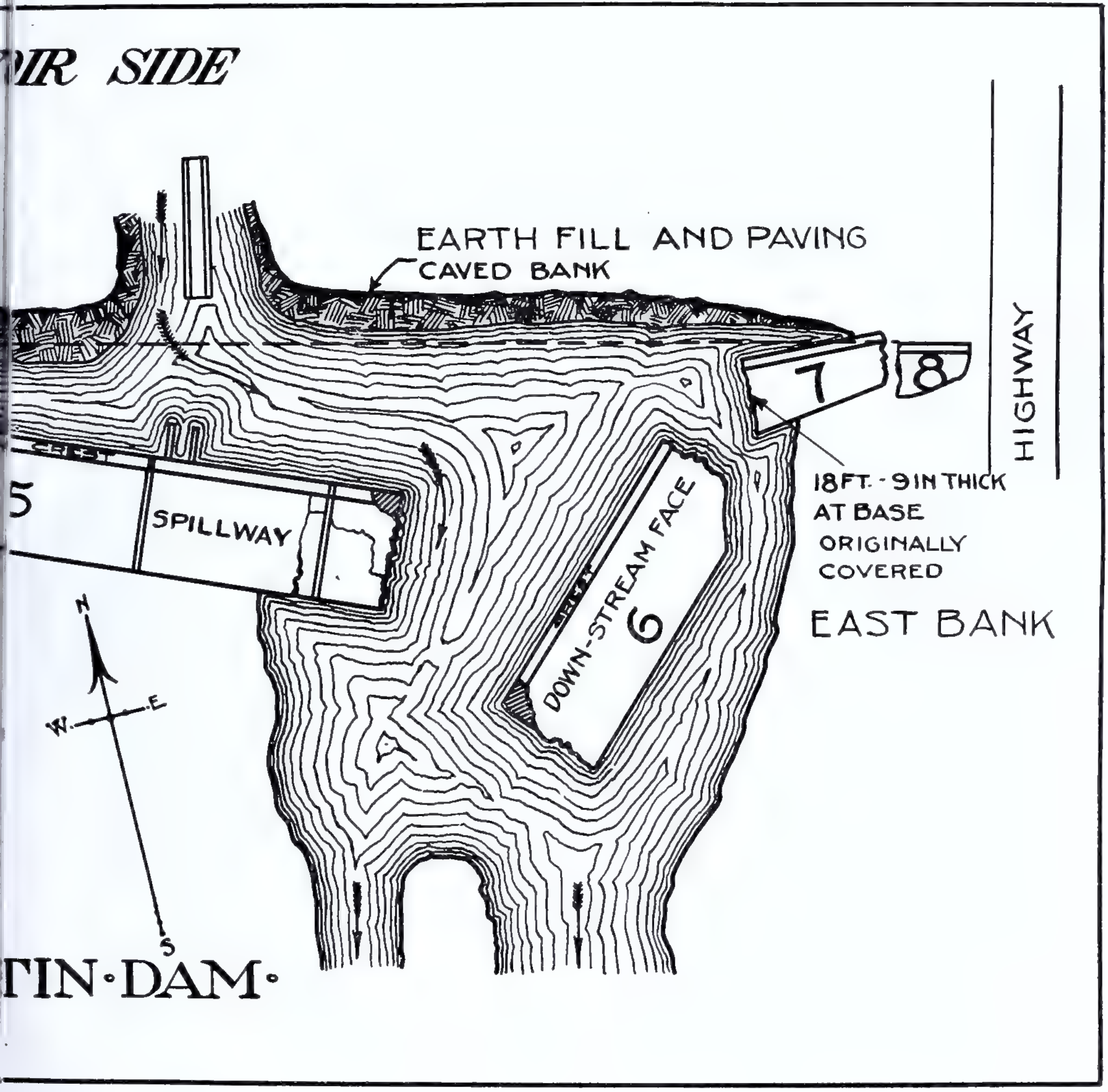
In December, 1909, after the dam was completed and before any water was stored in the reservoir, two vertical cracks appeared, one 51.3 feet to the west of the spillways and the other 39.5 feet to the east thereof. These cracks were about one-sixteenth of an inch wide, and extended from the ground to the crest, and were due to construction. In January, 1910, the reservoir filled so that on January 21st, water was flowing over the spillway. On January 22nd, there was a land slide on the east hill on the downstream side of the dam and water was issuing from under this slide. Furthermore, water passed under the structure and came up through the ground on the downstream side several feet below the dam. The next day the central portion of the structure slid downstream 18 inches at the bottom and 31 inches at the top. The reservoir was then emptied and the water pressure on the upstream face was released by removing, with dynamite, an upper portion of the dam at the west end, a large ''V'' shaped section 15 feet deep just east of the spillway, and also a wooden cap from the downstream end of the clean-out pipe. After the reservoir was emptied it was seen that the rolled embankment which had been originally placed against the upstream face had been washed out for a distance of about 100 feet on each side of the intake chamber and that each side wall of this chamber had a crack about 18 inches wide. These side walls of the chamber were perpendicular to the dam's upstream face so that a motion of 18 inches at the bottom of the dam caused a corresponding crack of 18 inches in the walls and a portion of each wall remained attached to and moved with the dam when it slid.

After the structure had moved and cracked as above described, nothing was done to strengthen it but water was again allowed to collect

RESER


HORIZONTAL SURFACE WITH 6 BENT RODS
EARTH FILL
SPALLED SURACE WITH 9 RODS
CREST
SPALLED SURFACE
1
3
DOWN-STREAM FACE
4
CREST
30 FT.
SPLIT OFF 6 FT 6 IN BELOW CREST ON A HORIZONTAL JOINT
WEST BANK
FOLDED STRATA
FOOTING OF 3 SPLIT ON CONSTRUCTION JOIN
2
FELL OCT. 3 - '11
CREST
SPLIT OCT. 29, 11
DOWN-STREAM FACE

·SKETCH·PLAN·OF·DEMOLISHED·AU


OIR SIDE
EARTH FILL AND PAVING
CAVED BANK
HIGHWAY
CREST
5
SPILLWAY
7
8
18 FT. - 9 IN THICK
AT BASE
ORIGINALLY
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behind it so that in March, 1910, there was a depth of 36 feet in the reservoir and later in the same month water rose to within two feet of the overflow and two streams were passing under the dam, appearing about 10 feet below the toe, and another stream was passing around the east end of the dam. Evidently, the clean-out pipe was closed when the reservoir had considerable water in it two months after the first failure.

Following this partial failure plans were prepared for strengthening the structure, but they were not carried out, and in September, 1911, one of the holes blown out of the dam in 1910 was refilled and the other was in process of refilling when the reservoir overflowed and the dam failed.

Heavy rains caused the rapid accumulation of water in the reservoir and on the afternoon of September 30th, the spillway level was reached and the dam leaking badly at numerous points. About 2.30 P. M. when 2 inches of water flowed over the crest, a portion of the concrete near the west end burst forward and was immediately followed by a complete demolition of the structure, proceeding in sequence from the west to the east end. The water released almost simultaneously across the dam, picking up thousands of cords of pulp wood stored between the dam and the paper mill, descended upon the town, causing the loss of many lives, carrying away buildings, streets, trees and all else in its path, in Austin, and destroying numerous buildings in Costello.

The structure broke into eight major pieces, numbered consecutively from 1 to 8, in Figure 8, beginning on the west side. No. 1 is the west cut-off wall, 30 inches wide on top, which is still in place for about 135 feet. No. 2 is a large block of the rollway, 20 feet long, immediately adjoining the cut-off wall, which broke off about 35 feet below the crest, where its width was 18 feet, pulling away from four 1¼ inch twisted steel bars, and was deposited with its base facing upstream about 100 feet below the dam. The third block was torn from its foundation, leaving a portion of the upstream side thereof, in place above water, and was deposited some 40 to 50 feet below its original position. The 4th piece, 100 feet long, containing the foundation and rollway section, both moved downstream so that at its central point it is 21 feet off line, the west end being a little upstream of the east end. The next, or 5th piece, 130 feet long, also moved bodily downstream, its west end being approximately 25 feet off line and the east end about 40 feet, the opening between the 4th and 5th pieces being about 8 feet at the top and 3 feet at the bottom. This piece includes the spillway. A large crack started near the east end of the spillway and ran down the face of the dam in an irregular line to the water line, where it is several inches wide. The 6th piece, about 80 feet long, likewise moved downstream so that its west end is about 60 feet off line, and its east end about 25 feet. Between the 5th and 6th pieces is a large gap about 40 feet wide, in which lies a block of concrete which appears to be that which was used in refilling the gap blown out by dynamite as above mentioned. The 7th piece, 40 feet long, is about 5 feet off line at the west end almost on line at the east end. The 8th piece is the east cut-off wall and it is in place, extending 20 feet out from the bank, No. 7 having been broken from it at this point where the retaining wall section changes to the dam section. The downstream side of the top of the 7th section is almost touching the upstream face of the top of the 8th section. The sections which moved are inclined slightly upstream.

It is probable that if the gaps in the dam, blown out in 1910, had not been refilled or had the repairs recommended after the partial failure in 1910 been made, this catastrophe would have been averted. The reasons for the final and complete failure of the Austin dam is a matter of technical interest, and of much value in connection with the design and construction of dams. But is is not necessary to go further into the discussion at this time.

DAM INVESTIGATIONS.

Following the failure of the Austin dam, and acting with the approval of the Governor, this Commission has inspected 12 dams in response to requests which have come to this office direct, or have been referred to it by other departments. These structures, including solid masonry, hollow re-inforced concrete, earth fill and timber crib dams, were believed by the petitioners to be weak or in danger of failure, and in most cases repairs found necessary and were ordered made. Other requests have followed and a considerable amount of attention has been required by this new branch of our work, the entire time of one engineer being taken from other duties. To examine all dams in course of construction and to discover all weak structures will require a considerable addition to our engineering force, and to properly handle this problem requires experienced men to visit from time to time the structures built under construction. A considerable appropriation in excess of that which we are now receiving will, therefore, be necessary to properly carry on this work. Investigation demonstrates that some existing dams were apparently constructed without definite plan or with unskilled supervision, or receive no regular inspection and others are deficient in spillway or drain capacity. To properly utilize our water, reservoirs will be augmented and as the height of dams increases to meet the requirements of storage and of fall for hydro-electric installations, it becomes more important to have the design, construction and use of dams under constant control. The Commission recommends that the instructions of the Governor above referred to should be incorporated into legislation, and, that the Commission be empowered to pass upon the design, and construction, and control the operation of all dams hereafter built, and to examine all existing dams, with power to require repairs to insecure structures, or to direct their removal. This legislation should be strengthened by a severe penalty clause for failure to comply with the orders of the Commission.

Nothing in this new legislation should interfere with the operations of the State Department of Health relative to water works and sources of supply.

FLOOD PREVENTION.

The Commission since its organization has given attention to the problem of ameliorating floods, and during the past two years it has co-operated with the Flood Commission of Pittsburgh in the investigation of the cause and methods of reducing flood damage at Pittsburgh and vicinity. Although its report is not published at this writing, the following general conclusions of the Pittsburgh Flood Commission have been presented to this Commission. That a considerable reduction in freshet heights, involving the prevention of destructive floods, can be effected by means of 17 capacious storage reservoirs to be constructed on tributaries of the Allegheny and Monongahela rivers, at an expenditure of approximately $20,000,000. That flood damage at Pittsburgh which has averaged over $1,000,000 a year for the past ten years, is increasing, and that it is quite possible through a combination of weather conditions to develop a flood 5 feet higher than the past maximum.

DEFUNCT WATER CHARTERS.

At the recommendation of the Commission, the Legislature of 1911 passed an act authorizing the Water Supply Commission to proceed against water companies which have failed to use the franchises granted them by the State. Previous to that act, conflict of legislation and court decisions made indefinite the exact status of water companies which had not begun their works within two years after incorporation or completed the same within five years thereafter; the question being whether such companies were ipso facto defunct, or whether the courts must declare them so. The new law authorizes this Commission to examine into the condition of such companies and if the facts warrant, to request the Attorney General to proceed against those which are derelict and declare the forfeiture of their charters by quo warranto. The records have been carefully examined and the facts ascertained concerning all charters granted to water companies, and a considerable list of unused charters is being prepared for early reference to the Attorney General.

RECOMMENDATIONS.

REGULATION OF WATER POWER COMPANIES.

The Federal Government, numerous State Governments and several foreign countries exercise control over the development and operation of water powers. The United States operates through the Forest Service in controlling and regulating the development of power on streams within the national forest lands, and under the Act of March 3rd, 1901, permits are issued by the Secretary of Agriculture for the use of rights of way for the purpose of generating or distributing electrical power subject to rules formulated by the department.

The regulations of 1910 are based on the principles:

1. That water power is a public utility and subject to public regulation.

2. That those power sites now in public ownership should so remain, subject to use under permit or lease by private or public enterprises.

3. That non-use is waste, and, therefore, no lessee should be allowed to retain possession of any power site without reasonably complete, immediate and continuous utilization.

4. That in consideration of the privilege granted, some return should be received by the public in the form either of a fee, a rental or reduced rates. Detailed plans and maps are required to determine the degree of utilization and the works must be begun and completed within a fixed time. The rental is not a tax on the output but is in proportion to the estimated power value of the site, regardless of the power generated. The law provides for the revocation of permits at any time, but the Department of Agriculture recommends instead that indeterminate permits be issued subject to periodic adjustment of rentals.

The Legislature of New York in 1907 established the principle that new grants of water power rights should be made only on the basis of an annual rental to the State, readjusted at specific intervals. A State Commission has made a report on the progressive utilization of the developed water powers by the State.

Italy requires that an annual rental be paid for water power concessions which are limited to 30 years, renewable for 30 years, and such concessions specify the amount of water which may be diverted and the method which may be used, together with the manner of development. A limit is set for the beginning and completing the works.

In 1908, the Constitution of Switzerland was amended to place the control of water power in the hands of the National Government. All concessions are granted subject to the right of the Nation to impose a rental and subject to withdrawal.

The Province of Ontario, Canada, established in 1906, the Hydro-Electric Power Commission, which is now operating 281 miles of high tension main transmission line, and 180 miles of distribution line, buying current from the Ontario Power Company, at Niagara Falls, at $9.00 per horsepower per annum for all amounts above 25,000 horsepower. The rates charged the municipalities vary from $18.10 to $29.50 per horsepower according to distance and at present 21 municipalities are supplied with an aggregate of 30,500 horsepower. An act passed in 1898 provides for an annual rental from all water powers of over 150 horsepower minimum development upon Queen lands, and requires full development whenever the Government decides that there is demand for the power.

Th Statutes of Pennsylvania provide for approval of plans, and of incorporation papers of proposed water power companies by the State Water Supply Commission, and limit the time of beginning and completion of plant, but do not require payment of rental, limitation of franchises, or regulation of rates by the State.

STATE REGULATION OF STORAGE RESERVOIRS.

With the probable increase, which present indications lead us to anticipate in the construction of reservoirs for water storage, comes the problem of the regulation of their operation. As above stated, these reservoirs will improve water supplies, water powers, navigation, flood and drought conditions, but if constructed by private enterprise they will be built chiefly for the two former purposes, and their utility for the improvement of navigation and floods and drought conditions will be secondary, if considered at all, in their design and operation. In order that the greatest benefit, commensurate with its value and cost, of any reservoir site may be obtained, it is essential that the supervision of not only the design but later of the operation of the reservoirs should be delegated to a State authority, which can determine the possible benefit to water supplies, water powers, navigation, floods and droughts. It is therefore recommended that legislation be enacted placing in this Commission the control and regulation of large storage reservoirs, in addition to the control of the design of reservoirs, which it already has.

THE RIGHT TO ERECT DAMS.

The existing statutes relative to the right to construct dams in the streams of the Commonwealth, under which some large structures have been erected, were enacted more than 100 years ago, at a time when water power in the form of hydro-electric energy was unknown, it being used only by small local industries, and these acts are necessarily unsuitable to modern conditions. The utilization of our streams will be promoted by the passage of definite legislation granting to individuals, municipalities and corporations the right to dam water courses, subject to State approval of plans, specifications, construction and operation, and it is recommended that laws to this effect be enacted.

The Delaware river, which separates Pennsylvania from New York and New Jersey for several hundred miles on our eastern boundary, remains practically unused by water power developments, although it offers attractive opportunities at many points, which will be improved when storage has been effected at several power sites on tributaries in Pennsylvania and New York which are now in the early stage of development. The Commission refused three requests to develop this stream, at different points, because of the existing legal complications. In 1783, New Jersey and Pennsylvania agreed to exercise concurrent jurisdiction over this stream and while New Jersey enacted legislation in 1897 permitting the construction of dams therein and the generation of power therefrom, Pennsylvania has not concurred.

It is also advised that any projected water power improvement should be such as would form a part of the thorough utilization of the stream. Such provision could well be extended to all streams in the State and the Commission supplied with appropriation sufficient to make hydrographic reconnaissances to enable it to decide if any specific improvement proposed would or would not be an integral feature of the best method of utilization.

CHAPTER NO. 1.

DISCHARGE OF PENNSYLVANIA STREAMS.

INTRODUCTION.

Upon assuming its duties as conservator and distributor of the waters of this Commonwealth, the Commission decided that comprehensive knowledge on this subject required the determination of the flow of streams, and a considerable portion of its time and appropriations have been devoted to collecting information as to the discharges of both large and small water courses. In 1905, when the Commission was organized, the bulk of the reliable stream flow data in Pennsylvania consisted of records obtained by the Hydrographic Branch of the United States Geological Survey, although some municipalities and independent observers maintained a few scattered records. The first station to be established in the State by the United States Government was at Harrisburg, on the Susquehanna river, in 1890, followed in 1895 by one at Williamsport, on the West Branch of the Susquehanna river, and others were subsequently selected by the United States Geological Survey. Congress appropriated annually $200,000 for this work in the entire United States, until the session of 1906, when this amount was reduced to $150,000 necessitating a diminution in the number of stations operated, and in 1907, the appropriation was still further reduced. On January 1st, 1907, the stations discontinued by the United States Geological Survey during the previous summer were re-established by the Water Supply Commission, and on April 1st, all the stations in Pennsylvania, previously operated by the United States Geological Survey, were taken over and have been maintained by this Commission, and many new stations have been established.

The Commission is now receiving daily reports from 86 gaging stations, 11 of which were established in 1911, and this report consists largely of the records obtained at these stations, comprising all reliable records of the flow of streams in Pennsylvania, as well as those flowing out of or into the State.

In extending its stream gaging system, the Commission has cooperated with municipal corporations, water and water power companies and individuals who are interested in the results to be obtained, being thus relieved of considerable cost in maintenance, and enabled at small expense to build up an extensive system for the determination of the daily flow of Pennsylvania streams. It has been the endeavor to first place stations on all the large rivers, and gradually proceed to the determination of the flow of smaller streams, and there is now no stream in Pennsylvania draining over 1,000 square miles, and few draining 500 square miles or more, which is not gaged. There have also been obtained numerous records of the flow of streams, with watersheds smaller than 500 square miles, which have been selected by reason of co-operation, or of causes which render the knowledge of their flow particularly valuable.

As operated by this office, an observation station consists of either a graduated board placed upright in the stream on a bridge pier or other convenient point, or a chain with weight attached running along a graduated board, placed horizontally in a locked box on a bridge over the stream, the weight being lowered over a pulley by the observer to the water surface, and the length of the chain used read on the graduation. A paid observer, living in the vicinity of the gage, reads the height of the water once, and at some points, twice a day and more often during the flood periods. The Commission's Engineers visit these stations at regular intervals, and also at times of extreme high or low water, during which visits the cross-section of the stream is measured and the velocity of the current is determined by meter readings and from these data the discharge in cubic feet per second is computed. It is possible in this way to establish a curve, approximating the discharge in cubic feet per second, corresponding to any gage height of the stream so that the daily record as reported by the local observer can be readily converted into discharge volumes.

This office was operating on December 31, 1911, a total of 57 gaging stations, while 16 streams are being measured by other organizations which have placed their data at our disposal for publication. Thirteen stations have been established and later discontinued. The records published in this volume, which, arranged by drainage basins, include all the above, appear in the following tables, where are given the names of the streams gaged, point of observation, drainage basin in which they lie, date of establishing station, date of termination of record, (if not now maintained), and other information. Some of the stations have not yet been definitely rated so that the discharge cannot be satisfactorily computed, and in such cases only the gage readings given, together with the discharge on those days when velocity measurements were made.

TABLE No. 5.

Gaging Stations in Delaware Basin.

No.	Stream.	Location.	Established.	Discontinued.	Re-established.	Information Available.
1	West Br. Delaware River,	Hancock, N. Y.,	Oct. 15, 1902,			Discharge complete.
2	East Br. Delaware River,	Hancock, N. Y.,	Oct 14, 1902,			Discharge complete.
3	Lackawaxen River,	Hawley, Pa.,	July 2, 1908,			Discharge complete.
4	Wallenpaupack Creek,	Wilsonville, Pa.,	July 3, 1908,			Discharge measurements and gage heights.
5	Shohola Creek,	Lord's Valley, Pa.,	Sept. 22, 1911,			Discharge measurements and gage heights.
6	Rattlesnake Brook,	Spring Brook, Pa.,	Sept. 22, 1911,			Discharge measurements and gage heights.
7	Delaware River,	Port Jervis, N. Y.,	Oct. 12, 1904,			Discharge complete.
8	Big Bushkill Creek,	Shoemakers, Pa.,	Sept. 19, 1908,			Discharge complete.
9	Analomink Creek,	Henryville, Pa.,	Sept. 16, 1908,			Discharge complete.
10	Broadheads Creek,	Analomink, Pa.,	Sept. 17, 1908,			Discharge measurements and gage heights.
11	Pocono Creek,	Stroudsburg, Pa.,	Aug. 3, 1911,			Discharge measurements and gage heights.
12	McMichaels Creek,	Stroudsburg, Pa.,	Sept. 16, 1908,	July 16, 1910,	Aug. 3, 1911,	Station No. 1—discharge complete.
						Station No. 2—discharge measurements and gage heights.
13	Lehigh River,	So. Bethlehem, Pa.,	Sept. 22, 1902,	Feb. 13, 1905,	April 26, 1909,	Discharge complete.
14	Delaware River,	Reigelsville, N. J.,	July 3, 1906,			Discharge complete.
15	Tohickon Creek,	Point Pleasant, Pa.,	Sept. 13, 1883,			Discharge complete.
16	Delaware River,	Lambertville, N. J.,	July 22, 1897,	April 1, 1908,		Gage heights and monthly discharge from 1897 to 1902.
17	Neshaminy Creek,	Rushland, Pa.,	June 10, 1884,			Discharge complete.
18	Perkiomen Creek,	Frederick, Pa.,	Aug. 20, 1884,			Discharge complete.
19	Wissahickon Creek,	Philadelphia, Pa.,	May 5, 1897,	June 5, 1899, Mar. 9, 1901, May 22, 1902, Oct. 5, 1903, July 31, 1906,	July 1, 1900, Aug. 1, 1901 Nov. 1, 1902, Jan. 1, 1905	Discharge complete.
20	Schuylkill River,	Philadelphia, Pa.,	Jan. 1, 1903,			Discharge complete.
21	Darby Creek,	Lansdowne, Pa.,	July 31, 1911,			Discharge measurements and gage heights.
22	Brandywine Creek,	Chadds Ford, Pa.,	Aug. 1, 1911,			Discharge measurements and gage heights.

TABLE No. 6.

Gaging Stations in Susquehanna Basin.

No.	Stream.	Location.	Established.	Discontinued.	Re-established.	Information Available.
1	Shenango River,	Binghamton, N. Y.,	July 31, 1901,			Discharge complete.
2	North Br. of Susquehanna River.	Binghamton, N. Y.,	July 31, 1901,			Discharge complete.
3	Chemung River,	Chemung, N. Y.,	Sept. 7, 1903			Discharge complete.
4	Wyalusing Creek,	Wyalusing, Pa.,	Oct. 28, 1908,			Discharge complete.
5	Lackawanna River,	Scranton, Pa.,	July 1, 1908,	Sept. 16, 1911,		Discharge complete.
6	No. Br. Susquehanna River,	Wilkes-Barre, Pa.,	Mar. 30, 1899,			Discharge complete.
7	No. Br. Susquehanna River,	Danville, Pa.,	Mar. 25, 1899,	Mar. 9, 1904,	Mar. 24, 1905,	Discharge complete.
8	West Br. Susquehanna River,	Renovo, Pa.,	Sept. 1, 1905,			Discharge complete from January 1st, 1908.
9	Bald Eagle Creek,	Milesburg, Pa.,	Feb. 6, 1911,			Discharge complete.
10	Spring Creek,	Bellefonte, Pa.,	Feb. 7, 1911,			Discharge complete.
11	Bald Eagle Creek,	Beech Creek, Pa.,	June 23, 1910,			Discharge measurements and gage heights.
12	Pine Creek,	Waterville, Pa.,	July 15, 1908,			Discharge complete.
13	Lycoming Creek,	Williamsport, Pa.,	July 14, 1908,			Discharge complete.
14	West Br. Susquehanna River,	Williamsport, Pa.,	Mar. 1, 1895,			Discharge complete.
15	Loyalsock creek,	Forksville, Pa.,	July 17, 1908,			Discharge measurements and gage heights.
16	West Br. Susquehanna River,	Allenwood, Pa.,	Mar. 25, 1899,	April 5, 1902,		Discharge complete.
17	Raystown Branch of Juniata River.	Saxton, Pa.,	Aug. 31, 1911,			Discharge measurements and gage heights.
18	Frankstown Br. of Juniata River.	Huntingdon, Pa.,	May 1, 1895,			Discharge complete.
19	Kishacoquillas Creek,	Kulp's, Pa.,	Aug. 21, 1911			Discharge complete.
20	Tuscarora Creek,	Port Royal, Pa.,	Aug. 21, 1911			Discharge complete.
21	Juniata River,	Newport, Pa.,	Mar. 21, 1899,	July 14, 1906,	Jan. 7, 1907,	Discharge complete.
22	Conodoguinet Creek,	Hogestown, Pa.,	Sept. 26, 1911,			Discharge complete.
23	Susquehanna River,	Harrisburg, Pa.,	Jan. 1, 1891,			Discharge complete.
24	Yellow Breeches Creek,	White Hill, Pa.,	Mar. 22, 1909,	Oct. 31, 1909,	Jan. 22, 1910,	Discharge complete.
25	Big Swatara Creek,	Jonestown, Pa.,	Nov. 19, 1910,			Discharge complete.
26	Susquehanna River,	McCall Ferry, Pa.,	June 1, 1902,	Dec. 31, 1909,		Discharge complete.
27	Octoraro Creek,	Rowlandsville, Md.,	Nov. 21, 1896,	Sept. 30, 1899,		Discharge complete.
28	Deer Creek,	Churchville, Md.,	Dec. 14, 1904,	Mar. 31, 1909,		Discharge complete.

TABLE No. 7.

Gaging Stations in Potomac Basin.

No.	Stream	Location.	Established.	Discontinued.	Re-established.	Information Available.
1	West Br. of Little Antietam Creek.	Mont Alto, Pa., ...	May 1, 1909,	....	....	Discharge complete.
2	Antietam Creek, ...	Sharpsburg, Md., ...	June 24, 1897,	Aug. 26, 1905,	....	Discharge complete.
3	Monocacy River, ...	Frederick, Md., ...	Aug. 4, 1896,	....	....	Discharge complete.
4	Wills Creek, ...	Cumberland, Md., ...	May 5, 1905,	July 14, 1906,	....	Discharge complete.

TABLE No. 8.

Gaging Stations in Ohio Basin.

No.	Stream.	Location.	Established.	Discontinued.	Re-established.	Information Available.
1	Allegheny River,	Red House, N. Y.,	Sept. 4, 1903,	....	....	Discharge complete.
2	Conewago Creek,	Frewsburg, N. Y.,	Oct. 25, 1909,	....	....	Discharge measurements and gage heights.
3	Kinzua Creek,	Dewdrop, Pa.,	Oct. 23, 1909,	Nov. 20, 1911,	....	Discharge complete.
4	Brokenstraw Creek,	Youngsville, Pa.,	Oct. 22, 1909,	....	....	Discharge complete.
5	Oil Creek,	Rouseville, Pa.,	Oct. 20, 1909,	....	....	Discharge complete.
6	No. Branch French Creek,	Kimmeytown, Pa.,	May 4, 1910,	....	....	Discharge complete.
7	Cessewago Creek,	Meadville, Pa.,	May 2, 1910,	....	....	Discharge complete.
8	French Creek,	Carlton, Pa.,	April 29, 1908,	....	....	Discharge complete.
9	Sugar Creek,	Wyattville, Pa.,	May 6, 1910,	....	....	Discharge complete.
10	Clarion River,	Clarion, Pa.,	Nov. 17, 1884,	....	....	Discharge complete from November 22nd, 1909.
11	Red Bank Creek,	St. Charles, Pa.,	Oct. 19, 1909,	....	....	Discharge complete.
12	Mahoning Creek,	Dee, Pa.,	Oct. 18, 1909,	....	....	Discharge measurements and discharge curve.
13	Allegheny River,	Kittanning, Pa.,	Aug. 18, 1904,	....	....	Discharge complete.
14	Crooked Creek,	Rosston, Pa.,	Oct. 16, 1909,	....	....	Discharge complete.
15	Quemahoning Creek,	Stanton's Mills, Pa.,	Oct. 1901,	June, 1910,	....	Monthly discharge complete.
16	Mill Creek,	Ben's Creek, Pa.,	Aug. 1901,	April, 1911,	....	Monthly discharge complete.
17	Blacklick Creek,	Blacklick, Pa.,	Aug. 16, 1904,	July 15, 1906,	Jan. 8, 1907,	Discharge complete.
18	Loyalhanna Creek,	New Alexandria, Pa.,	Oct. 7, 1910,	....	....	Discharge complete.
19	Kiskiminetas River,	Avonmore, Pa.,	May 29, 1907,	....	....	Discharge complete.
20	Shenango River,	Sharon, Pa.,	Aug. 1, 1909,	....	....	Discharge complete.
21	Neshannock Creek,	New Castle, Pa.,	Aug. 9, 1909,	....	....	Discharge complete.
22	Mahoning River,	Youngstown, O.,	May 23, 1903,	July 23, 1906,	....	Discharge complete.
23	Cheat River,	Morgantown, W. Va.,	July 8, 1899,	Dec. 30, 1899, Dec. 29, 1900, Dec. 31, 1905,	July 1, 1900, Aug. 21, 1902, Nov. 18, 1908,	Discharge complete.
24	Tygart River,	Fetterman, W. Va.,	June 3, 1907,	....	....	Discharge complete.
25	West Fork River,	Enterprise, W. Va.,	June 2, 1907,	....	....	Discharge complete.
26	Dunkard Creek,	"Bobtown," Pa.,	Oct. 14, 1909,	....	....	Discharge measurements and gage heights.
27	Turtle Creek,	East Pittsburgh, Pa.,	Dec. 1, 1907,	....	....	Discharge complete.
28	Youghiogheny River,	Friendsville, Md.,	Aug. 17, 1898,	Dec. 31, 1904,	....	Discharge complete.
29	Youghiogheny River,	Confluence, Pa.,	Sept. 15, 1904,	....	....	Discharge complete.
30	Casselman River,	Confluence, Pa.,	Sept. 15, 1904,	....	....	Discharge complete.
31	Laurel Hill Creek,	Confluence, Pa.,	Sept. 15, 1904,	....	....	Discharge complete.
32	Youghiogheny River,	Connellsville, Pa.,	July 22, 1908,	....	....	Discharge complete.

A brief description of each stream is given with its discharge record to show its characteristics, in case it may be desired to apply certain data to other streams of similar physical features, which are not being gaged, and also to suggest their effect upon the stream flow. Information is given regarding the gaging stations and the gage, and where stations have been rated full data are published, including daily, monthly and annual discharges, the actual measurements which have been made, and the rating table, by which gage heights have been equated to stream discharge. Also an extensive list of the discharge of miscellaneous streams, divided according to drainage basins, is given. The stage of these streams at the time of measurement was noted and referred to bench marks so that subsequent data may be compared with them; many of these determinations being made during the fall of 1908, and since then few of the streams have made low records, notwithstanding the recurrence of dry years.

INFLUENCES CONTROLLING RUN-OFF.

Many phenomena influence the variation of run-off of Pennsylvania streams, the most important of which are rainfall, geology, size of drainage area, topography, character and thickness of soil, amount of forest cover in the catchment area and artificial or natural reservoir or lake storage. The useful effect of rainfall depends upon its amount and its seasonal distribution, heavy precipitation during the hot or growing season and lighter precipitation during the frozen period encouraging uniform run-off, the nature of rains, whether sudden showers or prolonged storms, also being a factor. If the surface cover is deep soil, sand or other pervious material, the flow of water is usually regular, and the minimum higher than if the rocks are bare or covered with a thin layer of soil for porous material holds water gathered during wet seasons for distribution during dry seasons, resulting generally in large summer flow in streams draining such regions. If the drainage basin is composed of abrupt hillsides and narrow valleys, and if the profile of the stream is steep and its course straight, other conditions being the same, the stream flow will be more irregular than if this area be more level, with flatter grade and less direct course in the stream. If the watershed is long and narrow with few tributaries, the maximum run-off, other conditions being equal, is usually less than if there are many tributaries joining at or near a common point, with a drainage area approximately fan-shaped. A factor of importance in maintaining flow, is the presence of limestone areas on the watershed; for while streams in limestone regions may have maximum rates of run-off affected by other causes, the minimum flow, replenished by natural storage in caverns in the limestone, is often exceptionally large. The size of the drainage basin is an essential element in determining the run-off, for small streams usually have more irregular flows than large ones, and yield larger annual totals.

To indicate conditions which affect run-off of streams the following is excerpted from Bulletin No. 425 of the University of Wisconsin, by D. W. Mead, entitled "The flow of streams and the factors that modify it with special reference to Wisconsin conditions."

"The factors that modify or control the quantity and occurrence of the run-off from a drainage area may be briefly summarized as follows:

1. Precipitation.
    - (a) Whether it occurs as rain or snow.
    - (b) The amount of each and the total annual precipitation.
    - (c) Its distribution throughout the year.
    - (d) Its intensity and manner of occurrence.
    - (e) The character of storms, including their direction, extent and duration.
2. Temperature.
    - (a) The variations of temperature on the area.
    - (b) The relation of extreme temperature to the occurrence of precipitation.
    - (c) The accumulation of snow and ice, caused by low temperatures.
    - (d) The occurrence of low temperature causing the freezing of the ground surface at times of heavy spring rains, resulting in excessive run-off.
3. Topography of drainage area.
    - (a) As to whether the surface is level or inclined, and the degree of inclination.
    - (b) As to character of area, whether smooth or rugged.
4. Geology of drainage area.
    - (a) Whether pervious or impervious.
    - (b) If pervious, whether pervious deposits are (a) shallow or deep; (b) level or inclined; whether the outlet or point of discharge of the pervious deposits are (c) in the valleys of other rivers or in the sea.
    - (c) As to the condition of the channel of the stream, whether (a) pervious or impervious; (b) whether or not the bed contains more or less extensive deposits of sand or gravel, permitting of the development of a more or less extensive underflow.
5. The conditions of the surface.
    - (a) Whether bare or covered with vegetation.
    - (b) Whether in natural condition or cultivated.
    - (c) Nature of vegetation, whether grassland, cultivated crops, or forests.
6. The character of the natural storage on the drainage area.
    - (a) Nature and extent of surface storage, consisting of lakes, ponds, marshes and swamps.
    - (b) Nature and extent of ground storage, consisting of gravel, sand and other similar pervious deposits.
7. The nature of the drainage area considered.
    - (a) As to size, whether large or small.
    - (b) As to shape, whether long or narrow, or short and broad.
    - (c) The location of the area relative to prevailing winds.
    - (d) The direction relative to the path of storms.
8. Character of the stream and its tributaries.
    - (a) As to slope or gredient, whether flat or inclined.
    - (b) As to falls and rapids on the stream.
    - (c) As to the section of the stream, whether deep or shallow.
    - (d) As to the arrangement of tributaries, whether joining the main stream at various points along its course or concentrated in a fan like arrangement at a more or less common point of discharge.

9. The artificial control of the stream.
    - (a) As to dams and storage reservoirs on the drainage area.
    - (b) As to the restrictions of the river sections by dykes and levees.
    - (c) As to the obstruction of the stream by piers, abutments and other obstructions in or adjacent to the waterway.
10. The artificial use of the stream.
    - (a) For irrigation.
    - (b) For water supply.
    - (c) For the supply of navigation canals.
    - (d) For artificial storage and regulation of the same.
11. Character and extent of the winds on the drainage area.
    - (a) As to their intensity and direction.
    - (b) As to the modification of the same by mountains and forests.
12. Ice formation.
    - (a) As modifying the winter flows of the streams.
    - (b) As to the formation of ice gorges, and their accompanying floods."

In general the quantity and variation of stream flow are due to a number of factors some fixed and some variable, each having an influence in proportion to its own character and intensity, and the relative character and intensity of every other factor. These combinations of factors are so numerous, and differ so widely even on a single drainage area, that no problem of flow can be determined from a consideration of the factors themselves except by comparison with the actual relative effects under circumstances more or less similar to those under investigation. The difference between the flows of two streams having essentially the same quantity and distribution of precipitation depends primarily on geographical and topographical conditions, including the relative amounts of natural storage resulting therefrom. The mean annual flow of any stream, and the variation in the flow throughout the year, depend mainly on the quantity and distribution of the precipitation modified by temperature conditions.

In using the records of the run-off of one stream in estimating that of another which has not been measured, the watersheds require careful examination with all the above mentioned modifying elements in mind. Proximity is of course very desirable, as the precipitation, topography, geology and many other conditions above enumerated are most likely to be similar, and it is also desirable to use a stream whose drainage area is of nearly the same size.

The records collected by the Commission which appear in this volume are of particular value by reason of the fact that most of them extend through the drought period of 1908-10, which was probably not equalled in the western part of the State in many years, and which has been exceeded in severity in eastern Pennsylvania only by the drought period in 1879-84. The actual minimum flows recorded in the fall of 1908 throughout the State were phenomenal, while the total yield from the watersheds for the period may be generally assumed as approaching closely what may be anticipated as a minimum for water supply and water power computations. These records, therefore, are, of nearly equal value, as regards low water flow, as those which cover longer periods of time. High water conditions, however, except at the older stations, are not so well covered, as there were few extremely high freshets in the last three years. For the design of dam spillways, channel requirements, etc., the records at the newer stations afford insufficient data, while those at some of the older stations on the larger rivers extend over periods of great floods, and the maximum discharge probably approaches that which may be anticipated. As there exists but meagre definite information relative to the maximum flow of small streams, ample provision for spillway capacity should be made, for in providing for maximum discharges it is advisable to consider that previous freshet records may be repeated and owing to changed conditions of surface, they may be exceeded.

The volume of water measured at certain stations, as actually passing such points, may in times of low water and drought be appreciably less than that apparently flowing in the stream above the gage; due to the sinking of a portion of the flow underground, when the river is in gravel or sand; hence, the resulting low water discharge as recorded may be less than the available supply where this underground flow is made available by a cut-off wall or dam foundation.

It is not practicable to estimate the quantity thus unrecorded, but in most cases it is a small percentage of the total flow in drought and an extremely small percentage of the annual yield.

Some records at more recently established stations are subject to correction as additional meter discharge measurements may necessitate changes in the rating curve, but it has been considered advisable to publish such data, when the curves are not definitely determined, rather than withhold the information until a future time when the curves may be more nearly correct. These records are noted in the descriptive matter relating to the station, in order to insure their being used with the possibility of error in mind, but at older stations the only changes which may be anticipated are alterations in the channel at the gage causing revision in the rating table, but effecting only contemporary and future records and not altering the published data.

These records become more valuable as the term of years covered increases, and a larger variation in climatic conditions is included, hence it is essential that this work, now widely established, and being rapidly extended, be maintained during future years. The appropriation available for this work has been limited, and the extensive work done by the Commission has only been possible by careful economies and through co-operation, but it is hoped that the results may be sufficiently appreciated to warrant larger appropriations.

It has been found impracticable to accurately measure the flow of many important streams on account of the existence of numerous mill dams, often in succession for miles along its course. In the wet seasons these dams do not have an appreciable effect on the regulation of the flow, but their operation seriously influences the accuracy of results in dry weather periods owing to the storage of water during a portion of the day for use during working hours. It has been difficult to secure satisfactory locations for gaging stations on the Lehigh and Schuylkill rivers, on account of the navigation pools and canals, and at Fairmount dam on the Schuylkill river at Philadelphia, the flow is determined by the flow over the dam, while at Bethlehem on the lower Lehigh, both the canal and the river have been measured. The method employed of reading gages twice daily does not necessarily show the actual conditions during the 24 hours and until a satisfactory automatic gage can be provided such streams cannot be correctly measured. The Commission has experimented with several automatic gages, but has not yet adopted one for practical use.

The accurate determination of discharge during periods when the surface of the streams are frozen is also difficult, as the gage is read through the ice cover, by which surface friction and other conditions are altered, so that a correction should be generally applied to the discharge as determined for open water conditions. Data on this subject are not considered sufficient to enable the uniform correction of records for this factor.

As stated above, limestone streams often maintain more uniform discharges than any other class of streams in Pennsylvania, and estimates of the flow of such streams are liable to error on account of the impossibility of determining the amount of the subterranean storage. The limestone streams in Pennsylvania passed through the extreme drought conditions of the summer and fall of 1908 with extraordinary large discharges, the recurrence of drought conditions in somewhat milder form in the latter part of 1909 found the storage reduced and resulted in lessened dry weather flow than in 1908, while the third year of drought brought in numerous cases the smallest minimum flow for the three-year period in the fall of 1910, indicating the gradual exhaustion of storage.

The flow of a number of streams draining the coal regions, notably the anthracite district, of eastern Pennsylvania, is often augmented with a considerable quantity of ground water drained or pumped from numerous mine workings, causing the minimum discharges of these streams to be larger than similar streams whose volume is not so augmented. These streams, however, owing to the vast amount of culm and sulphur carried by them, are not of use except to carry off this mine drainage, and it has not been considered that a determination of their discharge would be of much value, at present, so that few such streams have been rated.

In the extreme northeast section of the State in Monroe, Pike and Wayne counties, are secondary and small streams, draining a country combining extensive forest cover, sandstone formation, thin soil, numerous lakes, and glacial deposits. Numerous stations have been established on these streams owing to their value for water supply and water power, and the combined effect of these favorable elements is shown by records of large annual yield and well maintained minimums. Streams lying within the glacial area along the northern border, and in the northwest corner of the State, on which, however, conditions differ from those above described, show lower run-off and smaller minimums than those in the northeast. The chief differences are smaller precipitation, less forest cover, more cultivated land, and deeper soil cover.

Some of the long term records differ from those published heretofore by the United States Geological Survey, but not often to a material extent, due to the fact that numerous gagings have been made, since the early data were published and the discharge curves have been defined and corrected. The low water period which has just been passed afforded an opportunity for defining the lower portion of many curves which were formerly not very well established.

The records given in the appendix have been arranged according to the main drainage basins of the State, beginning with the Delaware river basin, the stations being placed in numerical order, shown on the map at the beginning of this report.

Respectfully submitted,

JOHN BIRKINBINE,
Chairman.

FREDERIC W. FLEITZ,

THOMAS J. LYNCH,

SAMUEL G. DIXON,
Commissioner of Health.

ROBERT S. CONKLIN,
Commissioner of Forestry.

APPENDIX.

STREAM FLOW DATA.

DELAWARE BASIN.

WEST BRANCH DELAWARE RIVER.

DESCRIPTION OF BASIN.

This stream has its source in a small lake almost on the line of Schoharie and Delaware counties, New York, at an elevation of approximately 1,900 feet above sea level, on the western slope of the Catskill mountains and drains a total of 660 square miles. It flows southwesterly through a hilly, plateau region, well populated in the main valley, and the hills well timbered, to Deposit, about 5 miles above the State line, where it turns southeast and in about 5 miles joins the East Branch at Hancock, New York. About 8 miles above Deposit at Cannonsville is the site of a large storage reservoir proposed by the State Water Supply Commission of New York to flood a long, broad valley and contains approximately 7,000,000,000 cubic feet available storage.

At Hancock, the elevation is 895 feet above sea level, and the slope from there to Cannonsville, 16 miles above, is at the rate of 7 feet per mile, while above this point the slope is more rapid. In the upper section there are numerous lakes, ponds and swampy areas, the basin being relatively long and narrow with numerous short, lateral tributaries. The largest tributary is Oquaga creek, which comes in at Deposit from the west. The mean annual precipitation over this watershed is approximately 40 inches.

The discharge of this stream has been measured since October 1902 at Hancock, N. Y. near its mouth.

DELAWARE BASIN—STATION NO. 1

WEST BRANCH DELAWARE RIVER AT HANCOCK, N. Y.

DESCRIPTION OF STATION.

This station was established October 15, 1902, by the United States Geological Survey for the United States Weather Bureau. It is located at the toll, suspension bridge half a mile west of the Erie Railroad station at Hancock, N. Y., and about one mile above the junction of the East and West Branches.

The channel is straight for 400 feet above and 800 feet below the bridge. The current is swift. Both banks are high and rocky, and are not subject to overflow. The bed of the stream is composed of sand, gravel and cobble-stones.

Discharge measurements are made from the downstream side of the bridge, on which the gage is located. The bridge has a single span of 235 feet. The initial point for soundings is the top of the face of the left abutment on the downstream side.

The original wire gage was attached to the upstream side of the bridge. It was replaced July 20, 1903, by a standard chain gage. The location and gage datum were not changed. The length of the chain from the end of the weight to the marker is 30.44 feet. The gage is read once each day by David Pulver, the collector of tolls at the bridge. The bench mark is a circular chisel draft on the upstream corner of the left abutment. Its elevation is 24.25 feet above gage datum. The elevation of the top of the pulley is 30.54 feet above gage datum.

The high water stage is probably affected by backwater from the East Branch of the Delaware river. The low water stage is controlled by riffles about 800 feet below the station, but frequent changes in conditions of flow require many measurements and new ratings each year. During the winter months the discharge is affected considerably by ice.

The data published for this station is based upon 4 rating curves, each one having been changed or modified as additional meter measurements were obtained, made necessary by changing channel conditions. However, only the latest rating table, applicable for the years 1910 and 1911, has been published. Due to the above facts, daily gage heights and discharge for the years 1910 and 1911 only have been published; for previous years the monthly and annual results are given. For the early years the records as given are not complete as the data from which to correct the recorded flow during frozen and backwater periods were not then sufficiently complete. Since 1906, however, the records at Port Jervis and the East Branch have afforded sufficient reliable data upon which to base corrections.

This station has been operated by the United States Weather Bureau, in conjunction with the United States Geological Survey and the New York State Engineer and Surveyor.

Since the establishment of this station, 37 discharge measurements have been made.

The following data have been furnished by the United States Geological Survey.

DISCHARGE MEASUREMENTS OF WEST BRANCH DELAWARE RIVER, AT HANCOCK, NEW YORK.

(Drainage area, 660 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks
			Feet.	Sq. ft.	Ft. per Sec.	Feet.	Sec. ft.	
1	1902. Oct. 15,	Churchill & Covert,.	.....	....	......	3.95	1123	
2	1903. Feb. 12,	F. H. Tillinghast, ...	.....	....	......	5.80	4732	
3	March 25,	do.	.....	....	......	6.40	6693	
4	May 4,	do.	.....	....	......	2.75	368	
5	May 16,	E. C. Murphy, ...	.....	....	......	2.51	155	
6	May 28,	F. H. Tillinghast, ..	.....	....	......	2.55	134	
7	July 21,	do.	.....	....	......	3.10	406	
8	Aug. 31,	do.	.....	....	......	5.35	2990	
9	1904. July 15,	C. C. Covert, ...	......	326	0.55	3.05	180	
10	Sept. 11,	Covert & Swancott,	......	408	0.92	3.39	375	
11	1905. March 22,	Beebe & Swancott, ..	245	1130	4.89	6.38	5525	
12	March 23,	do.	245	1025	5.08	5.92	5211	
13	March 24,	do.	253	937	4.29	5.55	4022	
14	March 25,	do.	300	1633	6.97	8.05	11380	
15	March 26,	do.	295	1689	5.42	7.45	9165	
16	Aug. 18,	Covert & Weeks, ...	222	543	1.43	3.90	774	
17	1906. March 29,	Horton & Mott, ...	243	949	3.81	5.50	3620	
18	March 31,	do.	250	1080	4.70	6.10	5080	
19	April 12,	Covert & Weeks, ...	248	1080	4.52	6.15	4900	
20	April 13,	do.	243	1040	4.12	5.90	4280	
21	July 25,	Covert, ...	196	349	0.90	3.22	315	
22	Oct. 6,	do.	200	335	0.70	3.02	235	
23	1907. June 21,	Wood & Hoyt, ...	200	389	1.02	3.29	397	
24	1908 Sept. 3,	Adams, ...	185	188	0.21	2.38	40	
25	Sept. 4,	do.	185	185	0.16	2.42	29.5	
26	Sept. 26,	do.	60	28.3	1.61	2.39	45.6	Wading measurement.
27	Oct. 23,	Wood & French, ...	180	236	0.37	2.59	86.3	
28	1909. July 21,	Covert & James, ...	190	168	0.92	2.75	155	Wading measurement.
29	Nov. 18,	Hoyt & Covert, ...	72	74	0.70	2.48	51	Wading measurement.
30	1910. March 2,	W. G. Hoyt, ...	400	2180	7.66	9.91	16700	Ice floating.
31	March 3,	do.	280	1480	6.14	7.81	9080	Surface measurement.
32	March 4,	do.	242	1060	4.52	6.36	4790	Surface measurement.
33	March 9,	do.	230	992	4.22	6.06	4190	Surface measurement.
34	May 10,	C. C. Covert, ...	222	683	2.46	4.60	1680	
35	July 27,	Hoyt & Carman, ...	152	86	1.36	2.63	117	
36	1911. June 17,	C. S. DeGolyer, ...	219	758	3.12	5.21	2360	
37	June 19,	do.	212	598	2.27	4.44	1360	

DISCHARGE TABLE FOR WEST BRANCH DELAWARE RIVER, AT HANCOCK, N. Y., FOR 1910 AND 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
2.00	....	4.00	935	6.00	4000	8.00	9700	10.00	17100
.10	....	.10	1030	.10	4220	.10	10050	.10	17490
.20	25	.20	1130	.20	4450	.20	10400	.20	17880
.30	41	.30	1240	.30	4680	.30	10760	.30	18280
.40	60	.40	1350	.40	4910	.40	11120	.40	18680
.50	83	.50	1470	.50	5150	.50	11480	.50	19080
.60	110	.60	1590	.60	5400	.60	11840	.60	19480
.70	140	.70	1720	.70	5560	.70	12200	.70	19880
.80	175	.80	1850	.80	5930	.80	12560	.80	20280
.90	210	.90	1990	.90	6210	.90	12930	.90	20690
3.00	250	5.00	2130	7.00	6500	9.00	13300	11.00	21110
.10	295	.10	2280	.10	6790	.10	13670	.10	21530
.20	345	.20	2440	.20	7090	.20	14040	.20	21950
.30	400	.30	2610	.30	7400	.30	14420	.30	22370
.40	460	.40	2780	.40	7720	.40	14800	.40	22790
.50	525	.50	2960	.50	8040	.50	15180	.50	23210
.60	595	.60	3150	.60	8360	.60	15560	.60	23630
.70	670	.70	3350	.70	8690	.70	15940	.70	24050
.80	755	.80	3560	.80	9020	.80	16320	.80	24470
.90	845	.90	3780	.90	9360	.90	16710	.90	24890
								12.00	25310

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH DELAWARE RIVER, AT HANCOCK, N. Y.

1911.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.
1,	3.0	....	3.9	845	10.6	19500	4.5	1470	4.9	1990	4.8	1850	3.3	400	2.5	83	2.4	60	2.6	110	2.3	41	3.1	295
2,	3.2	....	3.9	845	9.3	14400	4.2	1130	4.6	1590	4.4	1350	3.1	295	2.6	110	2.4	60	2.6	110	2.4	60	3.0	250
3,	3.0	....	3.8	755	7.8	9020	4.1	1030	4.7	1720	4.2	1130	3.3	400	2.6	110	2.4	60	2.3	41	2.3	41	3.1	295
4,	3.3	....	3.7	670	7.0	6500	4.0	935	4.6	1590	4.0	935	3.1	295	2.5	83	2.8	175	2.5	83	2.3	41	3.1	295
5,	2.9	....	5.2	....	6.5	5150	3.9	845	4.5	1470	3.8	755	3.1	295	2.5	83	3.1	295	2.5	83	2.6	110	3.0	250
6,	3.1	....	5.0	....	6.3	4680	3.9	845	4.2	1130	4.4	1350	2.9	210	2.5	83	3.0	250	2.4	60	2.9	210	3.0	250
7,	4.5	....	5.1	....	7.8	9020	3.8	755	4.1	1030	4.5	1470	2.7	140	2.4	60	3.2	345	2.4	60	3.1	295	3.2	....
8,	5.1	....	4.9	....	6.9	6210	4.1	1030	4.2	1180	4.4	1350	2.9	210	2.5	83	2.9	210	2.4	60	3.0	250	3.0	....
9,	4.7	....	5.0	....	6.1	4220	3.9	845	4.1	1030	4.2	1130	2.8	175	2.6	110	2.8	175	2.4	60	2.8	175	3.2	....
10,	4.5	....	5.4	....	5.6	3150	3.8	755	4.5	1470	4.1	1030	2.9	210	2.5	83	2.7	140	2.4	60	2.8	175	3.4	....
11,	4.1	....	4.8	....	5.0	2130	3.8	755	4.2	1130	4.1	1030	2.7	140	2.7	140	2.7	140	2.4	60	3.9	845	3.5	....
12,	4.2	....	4.7	....	4.9	1990	3.7	670	4.2	1130	4.5	1470	2.8	175	2.6	110	2.5	83	2.4	60	4.0	935	4.0	....
13,	4.1	....	4.6	....	4.8	1850	4.1	1030	4.0	935	4.5	1470	2.7	140	2.6	110	2.5	83	2.3	41	3.5	525	4.0	....
14,	4.1	....	4.5	....	4.8	1850	3.9	845	3.9	845	4.2	1130	2.6	110	2.6	110	2.6	110	2.4	60	3.5	525	4.0	....
15,	4.2	....	4.6	....	4.6	1590	3.7	670	3.8	755	4.1	1030	2.6	110	2.5	83	2.6	110	2.5	83	3.4	460	3.8	....
16,	4.0	....	4.5	....	4.3	1240	3.8	755	3.8	755	4.0	935	2.5	83	2.5	83	2.5	83	2.4	60	3.3	400	3.9	....
17,	3.9	....	4.8	....	4.4	1350	3.6	595	3.7	670	4.1	1030	2.7	140	2.5	83	2.8	175	2.3	41	3.2	345	4.0	....
18,	4.1	....	4.9	....	4.0	935	3.7	670	3.6	595	4.0	935	2.7	140	2.4	60	2.5	83	2.4	60	3.1	295	3.9	....
19,	4.5	....	4.7	....	4.1	1030	4.2	1130	3.6	595	4.8	1850	2.6	110	2.5	83	2.4	60	2.3	41	3.1	295	3.8	....
20,	5.4	....	4.6	....	4.4	1350	4.3	1240	3.6	595	4.1	1030	2.5	83	2.4	60	2.4	60	2.4	60	3.5	525	3.6	....
21,	5.5	....	4.7	....	5.0	2130	4.2	1130	3.5	525	3.9	845	2.5	83	2.4	60	2.5	83	2.4	60	2.8	175	3.5	....
22,	11.0	21100	7.1	....	5.2	2440	4.1	1030	3.4	460	3.7	670	2.7	140	2.6	110	2.5	83	2.3	41	3.1	295	3.5	....
23,	7.7	8690	7.1	....	5.0	2130	4.1	1030	3.4	460	3.6	595	2.7	140	2.4	60	2.4	60	2.4	60	3.0	250	3.3	....
24,	6.1	4220	6.1	....	5.2	2440	4.0	935	3.3	400	3.5	525	2.7	140	2.4	60	2.4	60	2.4	60	3.0	250	3.5	....
25,	5.2	2440	5.7	....	5.6	3150	4.2	1130	4.2	1130	3.3	400	2.6	110	2.5	83	2.5	83	2.4	60	3.1	295	3.7	....
26,	5.8	3560	5.4	....	5.8	3560	4.8	1850	6.1	4220	3.2	345	2.7	140	2.5	83	2.6	110	2.4	60	3.2	345	4.7	....
27,	4.6	1590	5.5	....	5.6	3150	6.0	4000	5.4	2780	3.2	345	2.6	110	2.4	60	2.5	83	2.4	60	3.2	345	4.6	....
28,	4.5	1470	11.1	8000	5.1	2280	5.6	3150	5.4	2780	3.2	345	2.7	140	2.4	60	2.7	140	2.4	60	3.1	295	4.5	....
29,	4.2	1130	....	....	4.8	1850	5.1	2280	4.7	1720	3.3	400	2.6	110	2.4	60	2.6	110	2.5	83	3.1	295	4.5	....
30,	3.5	525	....	....	4.8	1850	5.1	2280	4.4	1350	3.2	345	2.7	140	2.4	60	2.7	140	2.3	41	3.1	295	5.4	....
31,	4.0	935	....	....	4.5	1470	....	....	4.5	1470	....	....	2.6	110	2.4	60	....	....	2.3	41	....	....	5.2	....

Ice present Jan. 1 to 21, Feb. 5 to 28, and Dec. 7 to 31. Relation gage height to discharge probably affected by backwater from ice jam Feb. 28. Not known if gage readings were to water surface or top of ice during these periods. Daily discharge determined from discharge rating curve fairly well defined. Assumed unaffected by ice except Feb. 28, for which date discharge is estimated from discharge of East Branch Delaware River.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH DELAWARE RIVER, AT HANCOCK, N. Y.

1911.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.
1,	4.3	1240	3.8	....	4.8	400	4.8	1850	3.9	845	2.9	210	3.3	400	2.7	140	3.1	295	2.8	175	4.5	1470	4.0	935
2,	5.1	2280	4.1	....	3.9	400	4.4	1350	3.8	755	3.0	250	3.2	345	2.6	110	2.9	210	3.7	670	4.2	1130	4.0	935
3,	8.0	9700	3.8	....	4.1	400	4.2	1130	4.0	935	2.8	175	3.1	295	2.5	83	2.9	210	3.6	595	4.0	935	3.9	845
4,	6.8	5930	3.5	....	3.8	350	4.2	1130	3.8	755	2.8	175	2.9	210	2.5	83	2.9	210	3.3	400	3.8	755	3.7	670
5,	5.4	2780	4.4	....	3.8	350	4.3	1240	3.7	670	3.0	250	3.0	250	2.5	83	2.8	175	3.4	460	3.7	670	3.7	670
6,	5.0	2130	5.8	....	3.5	300	6.9	6210	3.6	595	3.2	345	2.9	210	3.0	250	3.5	525	3.2	345	4.0	935	3.5	525
7,	4.8	1600	4.1	....	3.4	250	7.6	8360	3.5	525	3.3	400	3.3	400	3.3	400	3.6	595	3.9	845	3.9	845	3.5	525
8,	4.5	1200	4.5	....	3.1	200	6.8	5930	3.4	460	3.2	345	3.1	295	3.8	755	3.3	400	3.8	755	3.9	845	3.5	525
9,	4.5	900	5.1	....	3.1	200	6.2	4450	3.4	460	3.0	250	2.8	175	2.7	140	3.0	250	3.8	755	3.8	755	3.7	670
10,	4.0	700	5.1	....	3.2	300	5.6	3150	3.3	400	3.0	250	2.9	210	2.6	110	4.5	1470	3.6	595	3.7	670	3.6	595
11,	3.9	600	4.4	....	3.3	400	5.5	2900	3.3	400	2.9	210	2.9	210	2.7	140	4.1	1030	3.5	525	3.8	755	3.8	755
12,	4.2	800	3.9	....	3.7	600	5.3	2610	3.3	400	5.3	2610	2.7	140	2.6	110	3.9	845	3.6	595	4.0	935	3.8	755
13,	4.8	800	4.0	....	3.9	700	5.0	2130	3.4	460	6.3	4680	2.7	140	2.5	83	3.7	670	3.5	525	4.0	935	3.8	755
14,	5.0	2130	4.3	....	4.4	800	5.1	2280	3.3	400	6.2	4450	2.6	110	2.6	110	3.4	460	3.3	400	3.9	845	4.0	935
15,	5.8	3560	4.0	....	5.8	1000	6.2	4450	3.2	345	5.4	2780	2.6	110	2.5	83	3.3	400	3.3	400	3.9	845	4.0	935
16,	4.8	1850	3.8	....	4.5	900	5.7	3350	3.1	295	5.1	2280	2.5	83	2.6	110	3.2	345	3.2	345	3.7	670	4.4	1350
17,	4.1	1030	3.8	....	4.1	800	5.3	2610	3.1	295	4.9	1990	2.7	140	2.5	83	3.0	250	3.0	250	4.1	1030	4.9	1990
18,	3.9	845	4.1	....	4.1	700	5.0	2130	3.1	295	4.7	1720	2.8	175	2.5	83	3.1	295	3.7	670	5.4	2780	4.7	1720
19,	3.6	595	4.5	....	3.8	600	4.7	1720	3.2	345	4.4	1350	2.7	140	2.7	140	3.0	250	4.9	1990	4.6	1590	4.5	1470
20,	4.0	600	4.1	....	3.6	595	4.9	1990	3.1	295	4.1	1030	2.6	110	2.5	83	3.0	250	4.7	1720	4.3	1240	4.1	1030
21,	4.2	600	4.1	....	3.6	595	4.8	1850	3.1	295	3.9	845	2.7	140	2.5	83	2.9	210	4.3	1240	4.4	1350	4.0	935
22,	3.9	500	4.3	....	4.0	935	4.9	1990	3.1	295	3.9	845	2.5	83	2.5	83	2.9	210	4.3	1240	4.0	935	4.0	935
23,	3.7	500	4.3	....	4.6	1590	4.9	1990	3.0	250	3.4	460	2.5	83	2.5	83	2.9	210	5.5	2960	4.1	1030	5.5	2960
24,	3.5	400	4.0	....	4.6	1590	4.6	1590	3.0	250	3.3	400	2.7	140	2.5	83	2.8	175	5.3	2610	4.2	1130	5.6	3150
25,	3.6	400	4.1	....	3.9	845	4.4	1350	3.4	460	3.3	400	2.9	210	2.5	83	2.9	210	4.8	1850	4.0	935	5.0	2130
26,	3.4	350	3.8	....	4.3	1240	4.3	1240	3.2	345	3.2	345	2.7	140	2.7	140	2.8	175	4.5	1470	3.8	755	4.8	1850
27,	3.4	400	3.9	....	6.8	5930	4.1	1030	3.1	295	3.0	250	2.7	140	2.7	140	2.7	140	4.3	1240	4.2	1130	4.9	1990
28,	6.9	6210	4.6	....	8.8	12600	4.1	1030	3.1	295	3.6	595	2.7	140	2.9	210	2.7	140	4.2	1130	4.1	1030	4.7	1720
29,	5.8	3560	....	....	6.2	4450	4.0	935	3.0	250	3.4	460	2.4	60	3.0	250	2.7	140	4.0	935	4.0	935	4.0	935
30,	5.2	2440	....	....	5.1	2280	3.9	845	3.0	250	3.2	345	2.6	110	3.3	400	2.9	210	3.8	755	4.0	935	3.8	755
31,	4.0	935	....	....	5.4	2780	....	....	2.9	210	....	....	2.6	110	3.2	345	....	....	3.8	755	....	....	3.8	755

Relation gage height to discharge affected by ice Jan. 7 to 13, 20 to 27, and Feb. 1 to Mar. 19. Gage height may also have been slightly affected by ice at other times during January and March. Daily discharge determined from fairly well-defined rating curve. Discharge Jan. 7 to 13, 20 to 27, and Mar. 1 to 19, estimated from climatological records and discharge at Port Jervis.

ESTIMATED MONTHLY DISCHARGE OF WEST BRANCH DELAWARE RIVER, AT HANCOCK, NEW YORK.

(Drainage area, 660 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1902.					
October (15-31),	8090	378	....	....	....
November,	1980	184	622	.94	1.06
December,	12662	366	2439	3.70	4.27
a 1903.					
January,	....	....	....	....	....
February,	....	....	....	....	....
March, (16-31),	12560	1341	....	....	....
April,	2726	378	1170	1.77	1.98
May,	208	37	119	.18	.21
June,	3421	21	782	1.18	1.32
July.	1256	92	381	.58	0.67
August,	9368	184	1100	1.67	1.92
September,	2509	109	604	.92	1.03
October,	33740	136	3492	5.29	6.10
November,	5582	187	1013	1.53	1.71
December,	7460	418	2431	3.68	4.24
b 1904.					
January,	....	....	....	....	....
February,	....	....	....	....	....
March (7-31),	31830	2760	....	....	....
April,	6791	857	2666	4.04	4.51
May,	2627	346	1013	1.53	1.76
June,	1528	53	420	.64	0.71
July,	1680	129	410	.62	0.72
August,	3860	440	1247	1.89	2.18
September,	2670	196	761	1.15	1.28
October,	9560	332	1582	2.40	2.77
November,	1680	300	669	1.01	1.13
December,	8920	300	1696	2.57	2.96
c 1905.					
January,	7850	473	1899	2.88	3.32
February,	....	....	....	....	....
March, (19-31),	13240	4110	....	....	....
April,	4760	523	1894	2.87	3.20
May,	614	196	396	.60	0.69
June,	1204	113	454	.69	0.77
July,	1352	113	270	.41	0.47
August,	1322	144	397	.60	0.69
September,	4630	482	1344	2.04	2.28
October,	1859	196	652	.99	1.14
November,	5636	144	681	1.03	1.15
December,	10520	402	2026	3.07	3.54
d 1906.					
January,	....	....	....	....	....
February,	....	....	....	....	....
March,	....	....	....	....	....
April,	9380	695	3440	5.21	5.81
May,	1970	370	684	1.04	1.20
June,	7270	595	1670	2.53	2.82
July,	1320	205	432	.65	0.75
August,	1780	165	484	.73	0.84
September,	652	106	277	.42	0.47
October,	1970	205	574	.87	1.00
November,	5500	340	1180	1.79	2.00
December,	3700	267	1390	2.11	2.43

aJan. 1-Mar. 16-frozen, No estimate made.
bJan. 1-Mar. 7-frozen, no estimate made.
cFeb. 1-Mar. 18-frozen, no estimate made.

dJan.,Feb., Mar., ice conditions; no estimate made.

ESTIMATED MONTHLY DISCHARGE OF WEST BRANCH DELAWARE RIVER, AT HANCOCK, NEW YORK.

(Drainage area, 660 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a 1907.					
January,	6200	....	1840	2.79	3.22
February,	....	....	300	0.45	0.47
March,	7500	....	2390	3.62	4.17
April,	3140	840	1460	2.21	2.47
May,	2650	470	1200	1.82	2.10
June,	840	230	450	0.68	0.76
July,	540	83	266	0.40	0.46
August,	250	25	88	0.13	0.15
September,	2300	41	516	0.78	0.87
October,	5500	295	1440	2.18	2.51
November,	10000	470	2200	3.33	3.72
December,	18100	345	3120	4.73	5.45
The year,	18100	25	1270	1.93	26.35
b 1908.					
January,	3940	324	1230	1.86	2.14
February,	19800	....	1580	2.39	2.58
March,	12700	526	3870	5.86	6.76
April,	6630	1250	2640	4.00	4.46
May,	7810	526	2350	3.56	4.10
June,	690	63	250	0.38	0.42
July,	450	43	175	0.27	0.31
August,	187	43	81	0.12	0.14
September,	273	28	52	0.08	0.09
October,	1000	28	173	0.26	0.30
November,	450	228	278	0.42	0.47
December,	....	....	250	0.38	0.44
The year,	19800	28	1080	1.63	22.21

a Discharge during periods of ice conditions estimated on basis of discharge of Delaware river at Port Jervis, N. Y., and East Branch of Delaware river at Hancock, as follows:

	Second-feet.
Discharge January 26 to 31,	400
March 1 to 14,	250
March 15,	7500
December 7 to 10,	825

b Discharge during periods of ice conditions estimated on basis of discharge at Port Jervis, and East Branch of Delaware river at Hancock, as follows:

	Second-feet.
Discharge January 11,	800
February 1 to 15,	480
February 29,	800
March 1 to 3,	1000
December 3,	200
December 5 to 31,	258

ESTIMATED MONTHLY DISCHARGE OF WEST BRANCH DELAWARE RIVER, AT HANCOCK, NEW YORK.

(Drainage area, 660 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1909.					
January,	14000	150	2090	3.17	3.66
February,	14100	348	3680	5.58	5.81
March,	7210	468	1830	2.77	3.19
April,	8430	1250	2620	3.97	4.43
May,	6340	468	2320	3.52	4.06
June,	4440	297	1140	1.73	1.93
July,	348	67	189	0.29	0.33
August,	348	46	127	0.19	0.22
September,	163	30	65	0.10	0.11
October,	204	30	78	0.12	0.14
November,	204	46	79	0.12	0.13
December,	890	67	205	0.31	0.36
The year,	14100	30	1130	1.82	24.37
a 1910.					
January,	21100	....	1590	2.41	2.78
February,	8000	....	972	1.47	1.53
March,	19500	935	3990	6.04	6.96
April,	4000	595	1230	1.86	2.08
May,	4220	400	1270	1.92	2.21
June,	1850	345	969	1.47	1.64
July,	400	83	169	0.26	0.30
August,	140	60	83	0.13	0.15
September,	345	60	124	0.19	0.21
October,	110	41	62	0.09	0.10
November,	935	41	313	0.47	0.52
December,	....	....	295	0.45	0.52
The year,	21100	41	925	1.40	19.00
b 1911.					
January,	9700	350	1860	2.82	3.25
February,	....	....	450	0.68	0.71
March,	12600	200	1450	2.20	2.54
April,	8360	845	2500	3.79	4.23
May,	935	210	423	0.64	0.74
June,	4680	175	1020	1.55	1.73
July,	400	60	178	0.27	0.31
August,	755	83	164	0.25	0.29
September,	1470	140	365	0.55	0.61
October,	2960	175	942	1.43	1.65
November,	2780	670	1030	1.56	1.74
December,	3150	525	1180	1.79	2.06
The year,	12600	60	965	1.46	19.86

aDischarge for periods during which ice existed computed from discharge of Delaware river at Port Jervis and at Riegelsville.
Mean discharge Jan. 1 to 21 estimated 180 second-feet; practically constant.
Mean discharge Feb. 5 to 27 estimated 700 second-feet; slight variation.
Mean discharge Dec. 7 to 31 estimated 300 second-feet; nearly constant.

bDischarge for February estimated from climatological records and discharge at Port Jervis.

EAST BRANCH DELAWARE RIVER.

DESCRIPTION OF BASIN.

This stream rises at Grand Gorge in northeast Delaware County, New York, on the western slope of the Catskill mountains, at an elevation of 1,560 feet above sea level, and flows southwest through a hilly, plateau region, well populated in the main valley and in those of some of the largest tributaries, to its junction with the West Branch at Hancock, New York. The headwaters of its tributaries are in a wild, uninhabited region, well timbered, the highest hills reaching to 4,000 feet above sea level. Its largest tributary is Beaver Kill, coming in about 20 miles above Hancock on which stream are many lakes and ponds. The drainage area is broader and tributaries longer than those of the West Branch.

The total drainage area of the East Branch is 840 square miles, over which the mean annual precipitation is approximately 40 inches.

From its mouth to Margaretville, a distance of about 55 miles, the slope is 430 feet, giving an average slope of 8 feet per mile.

The discharge has been measured at Hancock, New York, since October, 1902.

DELAWARE BASIN—STATION NO. 2.

EAST BRANCH DELAWARE RIVER AT HANCOCK, NEW YORK.

DESCRIPTION OF STATION.

This station was established October 14, 1902, by the United States Geological Survey for the United States Weather Bureau.

It is located at the highway bridge one-half mile southeast of the Erie Railroad station at Hancock, N. Y., and one mile above the junction with West Branch of the Delaware. The Erie Railroad bridge is just below the station.

The channel is straight for 600 feet above and 300 feet below the station. The current is swift. Both banks are of medium height and are not liable to overflow. The bed of the stream is composed of rocks and gravel. There are three channels at low water and four channels at high water. During low water the elevation of the water surface at the station is lower than the water surface on West Branch of the Delaware, but there is no danger of the gage heights being affected by backwater from the West Branch, as there is considerable fall between the gaging station and the junction of the branches.

Discharge measurements are made from the downstream side of the five span, iron, highway bridge to which the gage is attached. The bridge has a total span of 425.5 feet between abutments. The initial point for soundings is the face of the right abutment at the top.

A standard chain gage is attached to the lower chord of the second span from the left end of the bridge on the upstream side. It was installed July 21, 1903, to replace the old wire gage. The gage datum was not changed. The length of the chain from the end of the weight to marker is 32.43 feet. The gage is read once daily by D. B. Van Etten. The bench mark is a circular chisel draft on the top of the left abutment on the downstream side, and is marked "B. M." Its elevation is 27.93 feet above gage datum. The elevation of the top of the gage pulley is 32.40 feet above gage datum.

Conditions for accurate ratings can not be considered good. The high water stage of the East Branch is probably affected by backwater due to gorging at its junction with the West Branch. Low water discharge is controlled by a rift just below the Erie Railroad bridge, but frequent changes in conditions of flow may require many measurements and new ratings each year. During the winter months the discharge is affected by needle ice jamming on these rifts causing backwater at the station.

The data published for this station is based upon 6 rating curves, each one having been changed or modified as additional meter measurements were obtained, made necessary by changing channel conditions. However, only the latest rating table applicable for the years 1910 and 1911 has been published. Due to the above facts, daily gage heights and discharge for the years 1910 and 1911 only have been published, whereas for previous years the monthly and annual results are given. For the early years the records as given are not complete as the data from which to correct the recorded flow during frozen and backwater periods were not then sufficiently complete. Since 1906, however, the records at Port Jervis and Reigelsville have afforded sufficient reliable data upon which to base corrections.

This station has been operated by the United States Weather Bureau, in conjunction with the United States Geological Survey and the New York State Engineer and Surveyor.

Since the establishment of this station, 36 discharge measurements have been made.

The following data have been furnished by the United States Geological Survey:

DISCHARGE MEASUREMENTS OF EAST BRANCH DELAWARE RIVER, AT HANCOCK, N. Y.

(Drainage area, 840 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1902.							
1	Oct. 4,	Churchill,	......	....	......	4.34	2320	
	1903.							
2	Feb. 12,	Tillinghast,	......	....	......	6.17	7394	
3	Mar. 26,	do	......	....	......	5.99	6578	
4	May 5,	do	......	....	......	3.18	691	
5	May 16,	Murphy,	......	....	......	2.98	514	
6	May 29,	Tillinghast,	......	....	......	2.70	292	
7	July 21,	do	......	....	......	3.62	1255	
8	Sept. 1,	do	......	....	......	4.95	3371	
	1904.							
9	July 14,	Covert,	......	586	.98	3.26	578	
10	Sept. 11,	Covert & Swancott,	......	528	.77	3.04	408	
	1905.							
11	Mar. 22,	Beebe & Swancott,	351	1568	4.38	6.18	6863	
12	Mar. 23,	do	337	1420	4.62	5.85	6554	
13	Mar. 24,	do	336	1309	3.85	5.42	5046	
14	Mar. 25,	do	352	2028	6.04	7.59	12260	
15	Mar. 26,	do	352	1879	5.57	7.00	10470	
16	Aug. 16,	Covert,	321	660	1.26	3.45	829	
17	Aug. 18,	Covert & Weeks,	318	643	1.23	3.40	791	
	1906.							
18	Mar. 29,	Horton & Mott,	335	1150	3.49	4.88	4010	
19	Mar. 31,	do	337	1400	4.04	5.68	5650	
20	April 12,	Covert & Weeks,	337	1560	4.74	6.10	7400	
21	April 13,	do	339	1410	4.35	5.78	6140	
22	July 26,	Covert,	274	669	1.28	3.40	855	
23	Oct. 6,	do	260	490	0.70	2.90	343	
	1907.							
24	June 21,	Wood & Hoyt,	283	726	1.32	3.30	955	
	1908.							
25	Sept. 4,	Adams,	178	242	0.37	2.34	90	
26	Sept. 27,	do	178	248	0.28	2.27	70	
27	Oct. 23,	Wood & French,	259	362	0.45	2.52	162	
	1909.							
28	July 22,	Covert & James,	267	290	0.77	2.64	222	Wading msm't.
29	Nov. 18,	Hoyt & Covert,	120	89	1.55	2.53	138	Wading msm't.
	1910.							
30	Mar. 1,	Hoyt,	......	22300	7.40	9.13	16500	Sub. surface msmt. Partly estimated, large cakes of ice running.
31	Mar. 3,	do	342	1890	6.00	7.73	11400	Sub-surface msm't.
32	Mar. 5,	do	318	1400	4.64	6.15	6500	Sub-surface msm't.
33	Mar. 8,	do	324	1500	5.15	6.48	7730	Sub-surface msm't.
34	May 10,	Covert,	304	738	2.17	3.91	1600	
35	July 28,	Hoyt & Covert,	152	224	1.17	2.70	262	Msm't m'de by wading above bridge.
	1911.							
36	June 19,	DeGolyer,	302	804	2.65	4.25	2130	

DISCHARGE TABLE FOR EAST BRANCH DELAWARE RIVER, AT HANCOCK, N. Y., FOR 1910 AND 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
2.00	----------	4.00	1750	6.00	6430	8.00	13000	10.00	20300
.10	----------	.10	1930	.10	6730	.10	13360	.10	20680
.20	53	.20	2110	.20	7040	.20	13720	.20	21060
.30	80	.30	2300	.30	7360	.30	14080	.30	21440
.40	113	.40	2490	.40	7680	.40	14440	.40	21820
.50	153	.50	2690	.50	8000	.50	14800	.50	22200
.60	198	.60	2900	.60	8320	.60	15160	.60	22580
.70	248	.70	3120	.70	8640	.70	15520	.70	22960
.80	304	.80	3340	.80	8960	.80	15880	.80	23340
.90	367	.90	3570	.90	9290	.90	16240	.90	23720
3.00	440	5.00	3800	7.00	9620	9.00	16600	11.00	24100
.10	525	.10	4040	.10	9950	.10	16970	.10	24490
.20	620	.20	4290	.20	10280	.20	17340	.20	24880
.30	725	.30	4540	.30	10620	.30	17710	.30	25270
.40	840	.40	4790	.40	10960	.40	18080	.40	25660
.50	965	.50	5050	.50	11300	.50	18450	.50	26050
.60	1100	.60	5310	.60	11640	.60	18820	.60	26440
.70	1240	.70	5580	.70	11980	.70	19190	.70	26830
.80	1400	.80	5860	.80	12320	.80	19560	.80	27220
.90	1570	.90	6140	.90	12660	.90	19930	.90	27610
								12.00	28000

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF EAST BRANCH DELAWARE RIVER, AT HANCOCK, N. Y.

1910.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.6	*	3.9	1570	9.7	19200	5.2	4290	5.0	3800	3.8	1400	3.1	525	2.6	198	2.4	113	2.7	248	2.5	153	3.2	620
2,	3.4	*	4.0	1750	8.9	16200	4.9	3570	4.7	3120	3.7	1240	3.1	525	2.6	198	2.4	113	2.7	248	2.5	153	3.2	620
3	3.7	*	3.8	1400	7.8	12300	4.7	3120	4.7	3120	3.7	1240	3.0	440	2.6	198	2.4	113	2.7	248	2.5	153	3.2	620
4,	3.6	*	3.7	1240	6.9	9290	4.4	2490	4.8	3340	3.5	965	3.0	440	2.6	198	3.1	525	2.6	198	2.6	198	3.1	525
5,	3.4	*	3.8	†	6.2	7040	4.4	2490	4.5	2690	3.4	840	2.9	367	2.8	304	3.4	840	2.6	198	2.7	248	3.3	‡
6,	3.5	*	3.6	†	6.1	6730	4.3	2300	4.4	2490	3.6	1100	2.9	367	2.7	248	3.3	725	2.6	198	2.9	367	3.4	‡
7,	4.1	*	4.5	†	7.0	9620	4.3	2300	4.2	2110	4.1	1930	2.9	367	2.7	248	3.4	840	2.6	198	3.1	525	3.4	‡
8.	5.4	*	4.6	†	6.9	9290	4.6	2900	4.1	1930	3.8	1400	2.9	367	2.6	198	3.3	725	2.6	198	3.1	525	3.5	‡
9,	5.2	*	4.7	†	6.0	6430	4.6	2900	4.1	1930	3.6	1100	2.8	304	2.6	198	3.1	525	2.6	198	3.0	440	3.4	‡
10,	5.1	*	4.9	†	5.5	5050	4.3	2300	4.0	1750	3.6	1100	2.8	304	2.6	198	3.0	440	2.6	198	3.0	440	3.3	‡
11,	5.0	*	4.6	†	5.1	4040	4.1	1930	3.8	1400	3.7	1240	2.9	367	2.8	304	2.9	367	2.4	113	3.3	725	3.8	‡
12.	4.9	*	4.7	†	4.9	3570	4.2	2110	3.7	1240	4.1	1930	2.9	367	2.9	367	2.8	304	2.4	113	3.8	1400	3.8	‡
13,	4.8	*	4.6	†	4.7	3120	4.4	2490	3.7	1240	4.0	1750	2.8	304	2.8	304	2.9	367	2.5	153	3.6	1100	3.7	‡
14,	4.7	*	4.7	†	4.8	3340	4.1	1930	3.6	1100	3.9	1570	2.7	248	2.7	248	2.8	304	2.5	153	3.5	965	3.6	‡
15,	4.7	*	4.8	†	4.6	2900	4.0	1750	3.5	965	3.8	1400	2.7	248	2.6	198	3.0	440	2.5	153	3.5	965	3.6	‡
16,	4.7	*	4.7	†	4.4	2490	4.1	1930	3.5	965	3.7	1240	2.7	248	2.6	198	2.9	367	2.5	153	3.4	840	3.7	‡
17.	4.6	*	4.7	†	4.5	2690	3.9	1570	3.4	840	4.0	1750	2.8	304	2.5	153	2.9	367	2.5	153	3.3	725	3.6	‡
18,	4.7	*	4.8	†	4.2	2110	3.9	1570	3.4	840	3.9	1570	2.8	304	2.5	153	2.7	248	2.5	153	3.3	725	3.6	‡
19.	5.0	*	4.9	†	4.2	2110	5.8	5860	3.5	965	4.3	2300	2.7	248	2.6	198	2.7	248	2.5	153	3.3	725	3.7	‡
20,	5.7	*	4.9	†	4.4	2490	5.0	3800	3.4	840	4.1	1930	2.7	248	2.8	304	2.7	248	2.5	153	3.2	620	3.7	‡
21,	5.6	*	5.0	†	5.2	4290	4.8	3340	3.3	725	3.8	1400	2.7	248	2.7	248	2.6	198	2.5	153	3.2	620	3.7	‡
22,	12.9	31600	6.7	†	5.2	4290	4.6	2900	3.5	965	3.7	1240	2.7	248	2.6	198	2.6	198	2.6	198	3.1	525	3.6	‡
23,	8.0	13000	7.0	†	5.0	3800	4.5	2690	3.4	840	3.6	1100	2.7	248	2.6	198	2.6	198	2.6	198	3.1	525	3.5	‡
24,	6.2	7040	6.0	†	5.5	5050	4.3	2300	3.3	725	3.5	965	2.7	248	2.6	198	2.6	198	2.6	198	3.1	525	3.6	‡
25,	5.4	4790	5.9	†	6.0	6430	4.3	2300	3.8	1400	3.4	840	2.7	248	2.5	153	2.7	248	2.5	153	3.2	620	5.0	‡
26,	4.9	3570	5.6	†	7.1	9950	6.1	6730	4.8	3340	3.3	725	2.6	198	2.5	153	2.8	304	2.5	153	3.3	725	4.6	‡
27,	4.6	2900	5.6	†	6.3	7360	7.8	12300	4.4	2490	3.3	725	2.6	198	2.5	153	2.8	304	2.5	153	3.2	620	4.4	‡
28,	4.4	2490	7.8	12300	5.7	5580	6.2	7040	4.3	2300	3.3	725	2.7	248	2.5	153	2.8	304	2.5	153	3.2	620	4.4	‡
29,	4.3	2300	------	------	5.5	5050	5.6	5310	4.0	1750	3.4	840	2.7	248	2.5	153	2.8	304	2.5	153	3.2	620	4.3	‡
30,	4.0	1750	------	------	5.6	5310	5.4	4790	3.9	1570	3.3	725	2.7	248	2.4	113	2.8	304	2.5	153	3.2	620	4.4	‡
31,	4.0	1750	------	------	5.5	5050	------	------	3.8	1400	------	------	2.7	248	2.4	113	------	------	2.5	153	------	------	4.6	‡

*Estimated 270 sec. ft. from discharge at Port Jervis and Riegelsville.
†Estimated 1050 sec. ft. from discharge at Port Jervis and Riegelsville.
‡Estimated 427 sec. ft. from discharge at Port Jervis and Riegelsville.

NOTE:—Ice present at this station from Jan. 1 to about Jan. 21 from a bout Feb. 5 to 27, and from about Dec. 5 to 31. It is not known whether the gage readings were to water surface or to top of ice.

Daily discharge determined from a discharge rating curve well defined.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF EAST BRANCH DELAWARE RIVER, AT HANCOCK, N. Y.

1911.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.1	1930	4.1	------	4.9	600	4.9	3570	4.1	1930	3.0	440	3.1	525	2.6	198	3.1	525	3.2	620	4.3	2300	4.3	2300
2,	4.5	2690	4.0	------	4.8	600	4.5	2690	4.3	2300	3.1	525	3.0	440	2.6	198	3.0	440	3.9	1570	4.1	1930	4.2	2110
3,	7.5	11300	3.7	------	4.9	600	4.3	2300	4.3	2300	3.0	440	3.0	440	2.6	198	2.9	367	4.1	1930	3.9	1570	4.1	1930
4,	7.1	9950	5.1	------	5.0	500	4.2	2110	4.1	1930	2.9	367	3.0	440	2.6	198	2.8	304	3.9	1570	3.8	1400	4.0	1750
5,	5.6	5310	5.3	------	5.1	400	4.2	2110	4.0	1750	2.9	367	2.9	367	2.5	153	2.7	248	3.9	1570	3.8	1400	3.9	1570
6,	4.9	3570	5.2	------	5.2	350	6.4	7680	3.8	1400	3.1	525	2.9	367	2.5	153	3.0	440	3.8	1400	3.8	1400	3.9	1570
7,	4.7	2400	5.3	------	5.0	350	8.0	13000	3.8	1400	3.3	725	3.2	620	2.7	248	4.0	1750	4.0	1750	4.1	1930	3.8	1400
8,	4.5	1800	5.2	------	4.8	300	7.3	10600	3.7	1240	3.2	620	3.1	525	2.7	248	3.5	965	4.4	2490	4.0	1750	3.8	1400
9,	4.3	1400	5.1	------	4.7	300	6.5	8000	3.6	1100	3.1	525	3.0	440	2.6	198	3.5	965	4.3	2300	3.9	1570	3.7	1240
10,	4.0	1000	5.1	------	4.8	450	5.7	5580	3.6	1100	3.0	440	2.9	367	2.6	198	4.1	1930	4.0	1750	3.8	1400	3.7	1240
11,	4.2	900	5.0	------	4.6	600	5.5	5050	3.5	965	3.2	620	2.9	367	2.5	153	3.8	1400	3.9	1570	3.8	1400	3.8	1400
12,	4.0	1200	4.8	------	4.7	900	5.3	4540	3.5	965	6.7	8640	2.8	304	2.5	153	3.7	1240	3.8	1400	3.7	1240	3.7	1240
13,	4.2	1200	4.9	------	4.6	1000	5.2	4290	3.5	965	7.8	12300	2.7	248	2.5	153	3.5	965	3.7	1240	4.6	2900	3.8	1400
14,	4.4	2490	5.2	------	4.8	1200	5.3	4540	3.5	965	6.9	9290	2.7	248	2.5	153	3.4	840	3.6	1100	4.3	2300	3.8	1400
15,	5.0	3800	5.3	------	5.1	1500	7.2	10300	3.4	840	5.6	5310	2.7	248	2.5	153	3.3	725	3.5	965	4.2	2110	3.8	1400
16,	4.6	2900	5.2	------	4.8	1400	6.4	7680	3.3	725	5.1	4040	2.7	248	2.5	153	3.2	620	3.5	965	4.2	2110	4.0	1750
17,	3.9	1570	5.3	------	4.1	1200	5.7	5580	3.3	725	5.0	3800	2.7	248	2.5	153	3.2	620	3.4	840	4.1	1930	4.5	2690
18,	4.4	1200	5.4	------	4.2	1100	5.2	4290	3.3	725	4.5	2690	2.8	304	2.4	113	3.1	525	3.4	840	4.1	1930	4.3	2300
19,	4.6	1000	5.5	------	4.1	900	4.9	3570	3.4	840	4.3	2300	2.7	248	2.5	153	3.1	525	5.4	4790	5.3	4540	4.2	2110
20,	4.6	900	5.4	------	4.1	900	5.1	4040	3.3	725	4.0	1750	2.3	80	2.5	153	3.0	440	4.9	3570	4.7	3120	4.0	1750
21,	4.4	900	5.3	------	4.3	900	5.2	4290	3.2	620	3.9	1570	2.7	248	2.5	153	3.0	440	4.5	2690	4.6	2900	4.0	1750
22,	4.5	800	5.2	------	4.1	1600	5.1	4040	3.2	620	3.7	1240	2.7	248	2.5	153	3.0	440	4.8	3340	4.4	2490	4.0	1750
23,	4.3	800	5.1	------	5.2	3000	5.0	3800	3.2	620	3.7	1240	2.6	198	2.5	153	3.0	440	5.3	4540	4.2	2110	4.6	2900
24,	4.2	700	4.9	------	5.3	3000	4.8	3340	3.2	620	3.5	965	2.7	248	2.4	113	3.0	440	5.5	5050	4.2	2110	5.6	5310
25,	4.1	600	4.9	------	5.2	2000	4.6	2900	3.3	725	3.4	840	2.6	198	2.4	113	3.0	440	5.0	3800	4.3	2300	4.9	3570
26,	4.2	600	4.7	------	5.2	2000	4.5	2690	3.2	620	3.3	725	2.7	248	2.6	198	2.9	367	4.6	2900	4.1	1930	4.6	2900
27,	4.3	600	4.9	------	5.9	6140	4.4	2490	3.1	525	3.3	725	2.6	198	2.7	248	2.9	367	4.3	2300	4.0	1750	4.6	2900
28,	6.0	6430	5.0	------	9.2	17300	4.3	2300	3.0	440	3.3	725	2.6	198	2.7	248	2.9	367	4.2	2110	3.9	1570	4.7	3120
29,	5.4	4790	------	------	6.3	7360	4.3	2300	3.0	440	3.4	840	2.6	198	3.1	525	2.9	367	4.1	1930	4.4	2490	4.2	2110
30,	4.6	2900	------	------	6.2	7040	4.2	2110	2.9	367	3.3	725	2.6	198	3.9	1570	3.2	620	4.0	1750	4.5	2690	4.1	1930
31,	4.4	2490	------	------	5.4	4790	------	------	2.9	367	------	------	2.6	198	3.4	840	------	------	3.9	1570	------	------	4.2	2110

NOTE:—Relation of gage height to discharge affected by ice January 7 to 13, 18 to 27, and Feb. 4 to Mar. 26. The observer stated that the river was frozen Mar. 25. It is probable that gage heights were slightly affected by backwater from ice during other periods in January.

Daily discharge determined from well-defined discharge rating curve. Discharge Jan. 7 to 13, 18 to 27, and Mar. 1 to 26, estimated from climatological records and the discharge at Port Jervis.

ESTIMATED MONTHLY DISCHARGE, EAST BRANCH DELAWARE RIVER, AT HANCOCK, N. Y.

(Drainage area, 840 square miles)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1902.					
October (15-31),	10400	903	------	------	------
November,	3424	679	1270	1.51	1.68
December,	23960	903	5093	6.06	6.99
a 1903.					
March (16-31),	20210	2733	------	------	------
April,	6601	744	2434	2.90	3.24
May,	679	270	416	0.50	0.58
June,	10670	198	2252	2.68	2.99
July,	4055	403	909	1.08	1.24
August,	10750	490	1817	2.16	2.49
September,	3520	368	962	1.15	1.28
October,	50510	334	5724	6.82	7.86
November,	9571	782	2205	2.62	2.92
December,	12440	1320	2914	3.47	4.00
b 1904.					
March (22-31),	72480	4449	------	------	------
April,	11680	1892	5162	6.15	6.86
May,	4554	793	1677	2.00	2.31
June,	2054	308	848	1.01	1.13
July,	6615	322	897	1.07	1.23
August,	3222	589	1305	1.55	1.79
September,	1435	322	656	0.78	0.87
October,	19240	589	2842	3.38	3.90
November,	4215	748	1329	1.58	1.76
December,	10590	1274	3064	3.65	4.21
c 1905.					
January,	10210	804	3261	3.88	4.47
February,	------	------	------	------	------
March (19-31),	15920	5010	------	------	------
April,	9645	1125	3123	3.72	4.15
May,	1082	402	698	0.83	0.96
June,	1227	252	555	0.66	0.74
July,	1485	252	455	0.54	0.62
August,	2752	252	548	0.65	0.75
September,	4215	804	1946	2.32	2.59
October,	2707	420	1112	1.32	1.52
November,	8910	492	1088	1.30	1.45
December,	17760	924	2837	3.38	3.90
d 1906.					
April,	15900	1330	5260	6.26	6.98
May,	4880	770	1540	1.83	2.11
June,	6290	866	2390	2.85	3.18
July,	2560	372	852	1.01	1.16
August,	2960	285	801	0.95	1.10
September,	830	225	436	0.52	0.58
October,	3530	320	1140	1.36	1.57
November,	7040	770	1960	2.33	2.60
December,	4220	1050	2270	2.70	3.11

a Jan. 1-Mar. 16, frozen; no estimates made.
b Jan. 1-Mar. 22, frozen; no estimates made.
c No estimate for frozen period.
d Jan., Feb., Mar., ice conditions, no estimates made.

ESTIMATED MONTHLY DISCHARGE, EAST BRANCH DELAWARE RIVER, AT HANCOCK, N. Y.—Continued.

(Drainage area, 840 square miles)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a 1907.					
January,	8910		2810	3.35	3.86
February,			450	0.54	0.56
March,	10200		3570	4.25	4.90
April,	4000	1480	2380	2.83	3.16
May,	3000	1270	2000	2.38	2.74
June,	2220	520	1170	1.39	1.55
July,			500	0.60	0.69
August,		104	182	0.22	0.25
September,	2130	104	486	0.58	0.65
October,	11800	720	2170	2.58	2.97
November,	17800	1340	4020	4.79	5.34
December,	26100	950	4320	5.14	5.93
The year,	26100	104	2000	2.39	32.60
b 1908.					
January,	5560	620	1830	2.18	2.51
February,	27800		2370	2.82	3.04
March,	19700	840	4680	5.57	6.42
April,	9460	2150	4040	4.81	5.37
May,	8020	1420	3390	4.03	4.65
June,	1590	198	546	0.65	0.72
July,	1590	153	362	0.43	0.50
August,	304	113	167	0.20	0.23
September,	840	53	125	0.15	0.17
October,	4480	153	529	0.63	0.73
November,	1260	440	655	0.78	0.87
December,			350	0.42	0.48
The year,	27800	53	1590	1.89	25.69
1909.					
January,	22000	250	3310	3.94	4.54
February,	30100	970	5610	6.68	6.96
March,	8020	1110	2780	3.31	3.82
April,	10000	2350	4040	4.81	5.37
May,	14600	840	3750	4.46	5.14
June,	1960	525	963	1.15	1.28
July,	440	198	289	0.34	0.39
August,	970	113	240	0.29	0.33
September,	248	153	180	0.21	0.23
October,	248	153	196	0.23	0.26
November,	525	153	223	0.27	0.30
December,	2150	150	461	0.55	0.63
The year,	30100	113	1810	2.19	29.25

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a Discharge during the frozen period and July 1 to August 7, 1907, estimated on the basis of the discharge of West Branch Delaware River at Hancock, N. Y., Delaware River at Port Jervis, N. Y., and climatological reports.

	Second-feet
Discharge January 23 to 31,	700
March 1 to 14,	300
March 15,	10,000
August 1 to 7,	300

b Discharge during the periods of ice conditions for 1908 determined from Delaware River at Port Jervis and West Branch Delaware River at Hancock.

	Second-feet
Discharge January 6 to 8,	1,500
January 31,	620
February 1 to 15,	573
March 2 to 3,	1,000
December 4 to 31,	343

ESTIMATED MONTHLY DISCHARGE, EAST BRANCH DELAWARE RIVER, AT HANCOCK, N. Y.—Continued.

(Drainage area, 840 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a 1910.					
January,	31600	----------	2480	2.95	3.40
February,	12300	----------	1880	2.24	2.53
March,	19200	2110	6200	7.38	8.51
April,	12300	1570	3440	4.10	4.57
May,	3800	725	1750	2.08	2.40
June,	2300	725	1280	1.52	1.70
July,	525	198	307	0.37	0.43
August,	367	113	208	0.25	0.29
September,	840	113	359	0.43	0.48
October,	248	113	174	0.21	0.24
November,	1400	153	600	0.71	0.79
December,	----------	----------	450	0.54	0.62
The year,	31600	113	1590	1.90	25.76
b 1911:					
January,	11300	----------	2580	3.07	3.54
February,	----------	----------	650	0.77	0.80
March,	17300	----------	2270	2.70	3.11
April,	13000	2110	4730	5.63	6.28
May,	2300	367	995	1.18	1.36
June,	12300	367	2180	2.60	2.90
July,	620	80	305	0.36	0.42
August,	1570	113	251	0.30	0.35
September,	1930	248	671	0.80	0.89
October,	5050	620	2140	2.55	2.94
November,	4540	1240	2090	2.49	2.78
December,	5010	1240	2070	2.46	2.84
The year,	17300	80	1750	2.08	28.21

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a Discharge for periods during which ice existed estimated from discharge at Port Jervis and Riegelsville.

Mean discharge Jan. 1 to 21 estimated 270 second-feet; nearly constant.
Mean discharge Feb. 5 to 27 estimated 1050 second-feet; slight variation.
Mean discharge Dec. 5 to 31 estimated 427 second-feet; nearly constant.

b Discharge for February estimated from climatological records and the discharge at Port Jervis.

LACKAWAXEN RIVER.

DESCRIPTION OF BASIN.

Lackawaxen river, the third largest tributary of the Delaware river in Pennsylvania, drains approximately 600 square miles in Pike and Wayne counties. Rising in a lake in the northwestern part of Wayne county, it follows a southeasterly course through a well populated agricultural region to Hawley, approximately 13 miles above its mouth, at which point it is joined by its largest tributary, Wallenpaupack creek; thence following an easterly direction through a narrow, precipitous valley, covered with second growth timber, and sparsely inhabited, to its mouth at Lackawaxen, Pike county, the total length being approximately 50 miles. Its source is at an elevation of about 1,950 feet above sea level, and its mouth about 600 feet. The principal tributaries are Dyberry, Middle and Wallenpaupack creeks, the watershed including a great number of lakes and ponds, and above Hawley it is wide and spreads out along its several large tributaries, converging at this point. The stream lies entirely within the glacial area, the slope being steep and the flow rapid for most of its course. The valley in its upper section is wide, gradually narrowing as the stream leaves the plateau, and flowing through a gorge in the mountains to the Delaware river. In its drainage basin lie the principal boroughs and villages of the county, several of which obtain water supplies from the tributaries and lakes in its watershed. The stream is used to a small extent for power purposes, while some sites are as yet undeveloped. The average yearly rainfall over this watershed is from 40 to 45 inches. The flow of this stream has been measured since July 2, 1908, at Hawley, approximately 13 miles above the mouth.

DELAWARE BASIN—STATION NO. 3.

LACKAWAXEN RIVER AT HAWLEY.

DESCRIPTION OF STATION.

This station was established July 2, 1908, by the Water Supply Commission of Pennsylvania, on a single span, through truss, highway bridge, about 2,000 feet above the mouth of Wallenpaupack creek. A standard chain gage is fastened to the upstream handrail of the bridge. The length of chain from center of rivet to bottom of weight is 23.46′, the elevation of zero being arbitrary datum. A bench mark is located on a spike 2 feet in from face of right abutment, and 3 feet up from ground, rod held close to abutment, elevation being 7.03 ft. above zero of gage.

Discharge measurements are made from the upstream side of the bridge, and by wading at low stages. The initial point for soundings is the outer edge of upstream iron handrail post, right bank. The channel is straight for about 150 feet above and below the station. The left bank is high and not subject to overflow, while the right bank overflows during extreme high stages. The bed is permanent, being composed of rock and gravel. Intermittent storage upstream at Honesdale affects the flow during low stages. The gage is read twice daily by J. S. Pennell.

Since the establishment of the gage, ten discharge measurements have been made.

DISCHARGE MEASUREMENTS OF LACKAWAXEN RIVER, AT HAWLEY, WAYNE COUNTY, PA.

(Drainage area 290 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
	1908.		Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
1	July 2,	Grant,	67	77	1.00	0.63	77	
2	July 30,	do	54	67	0.49	0.38	33	
3	Sept. 1,	Ryder,	67	74	0.97	0.55	71	
4	Sept. 22,	Grant,	60	55	0.60	0.15	33	Wading measurement 100′ above bridge. Water rose 0.4 during measurement.
	1909.							
5	May 6,	do	125	550	2.66	4.59	1463	
6	June 4,	do	106	176	1.37	1.47	241	
7	June 24,	do	99	160	1.16	1.33	185	
	1910.							
8	May 14,	Langenheim,	111	222	1.25	1.88	277	
9	Nov. 11,	do	100	123	0.96	0.94	118	
	1911.							
10	Sept. 23,	Langenheim,	99	119	0.71	0.79	84	

DISCHARGE TABLE FOR LACKAWAXEN RIVER AT HAWLEY, WAYNE COUNTY, FROM JULY 1, 1908, TO DECEMBER 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.00	4	.70	267	.40	870	.10	1745	.80	2800
.10	12	.80	290	.50	920	.20	1800	.90	2865
.20	22	.90	315	.60	970	.30	1855	7.00	2930
.30	32	2.00	340	.70	1015	.40	1915	.10	2995
.40	43	.10	367	.80	1065	.50	1975	.20	3060
.50	54	.20	396	.90	1115	.60	2035	.30	3125
.60	67	.30	426	4.00	1165	.70	2095	.40	3190
.70	81	.40	460	.10	1215	.80	2155	.50	3255
.80	95	.50	494	.20	1265	.90	2215	.60	3320
.90	111	.60	532	.30	1315	6.00	2280	.70	3385
1.00	128	.70	571	.40	1365	.10	2345	.80	3450
.10	146	.80	610	.50	1415	.20	2410	.90	3515
.20	164	.90	650	.60	1470	.30	2475	8.00	3580
.30	183	3.00	692	.70	1525	.40	2540	9.00	4230
.40	202	.10	735	.80	1570	.50	2605		
.50	223	.20	780	.90	1635	.60	2670		
.60	245	.30	825	5.00	1690	.70	2735		

Curve is well defined up to 5.0 ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LACKAWAXEN RIVER, AT HAWLEY, WAYNE COUNTY, PA.

1908.	JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	*70	.30	32	.25	27	.65	74	1.25	174	.50	54
2,	.60	67	.30	32	.25	27	.50	54	1.25	174	.50	54
3,	3.00	692	.30	32	.25	27	.45	48	1.00	128	.40	43
4,	1.00	128	.30	32	.25	27	.40	43	.85	103	.40	43
5,	.80	95	.20	22	.20	22	.40	43	.80	95	.40	43
6,	.50	54	.20	22	.25	27	.35	38	.75	88	.40	43
7,	.50	54	.30	32	.25	27	.30	32	.70	81	.40	43
8,	.50	54	.40	43	.25	27	.30	32	.70	81	.40	43
9,	.50	54	.40	43	.25	27	.30	32	.70	81	.40	43
10,	.40	43	.40	43	.25	27	.30	32	.60	67	.40	43
11,	.35	38	.30	32	.20	22	.25	27	.60	67	†	†
12,	.25	27	.30	32	.20	22	.30	32	.55	60	†	†
13,	.40	43	.30	32	.20	22	.30	32	.50	54	†	†
14,	.50	54	.30	32	.20	22	.30	32	.50	54	†	†
15,	.60	67	.30	32	.20	22	.30	32	.50	54	†	†
16,	.50	54	.30	32	.20	22	.30	32	.50	54	†	†
17,	.50	54	.30	32	.20	22	.30	32	.50	54	†	†
18,	.40	43	.30	32	.25	27	.30	32	.50	54	†	†
19,	.30	32	.30	32	.25	27	.30	32	.50	54	†	†
20,	.30	32	.25	27	.25	27	.20	22	.60	67	†	†
21,	.30	32	.20	22	.25	27	.20	22	.60	67	†	†
22,	.40	43	.20	22	.25	27	.20	22	.50	54	†	†
23,	.30	32	.20	22	.20	22	.20	22	.50	54	†	†
24,	.30	32	.20	22	.20	22	.20	22	.60	67	†	†
25,	.50	54	.20	22	.20	22	.20	22	.60	67	†	†
26,	.75	88	.25	27	.20	22	.40	43	.55	60	†	†
27,	.60	67	.30	32	.20	22	1.55	234	.50	54	†	†
28,	.50	54	.20	22	.25	27	2.00	340	.50	54	†	†
29,	.50	54	.25	27	1.05	137	2.30	426	.50	54	†	†
30,	.35	38	.25	27	1.20	164	1.70	267	.50	54	†	†
31.	.45	48	.25	27	------	------	1.35	192	------	------	†	†

*Estimated. †Frozen.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LACKAWAXEN RIVER, AT HAWLEY, WAYNE COUNTY, PA.

1909.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1.	*1.8	290	*2.0	340	3.25	802	3.5	920	6.5	2605	1.55	234	1.03	128	*.47	51	.10	12	.25	27	.35	37	.41	44
2,	*1.8	290	*2.1	367	3.1	735	3.4	870	7.3	3125	1.4	202	.98	125	.49	53	.20	22	.22	24	.36	39	.41	44
3,	*1.8	290	*2.0	340	2.9	650	3.3	825	6.1	2345	1.4	202	.76	89	.44	47	.20	22	*.20	22	.10	12	.36	39
4,	*1.8	290	*2.0	340	2.5	494	3.1	735	6.6	2670	1.45	212	*.72	84	.38	41	.11	13	.20	22	.24	26	.31	33
5,	*1.9	315	*2.2	396	2.3	426	2.95	671	5.9	2215	1.75	278	.68	78	.45	48	*.10	12	.19	21	.14	16	*.33	35
6,	5.8	2155	*2.2	396	2.2	396	2.85	630	4.8	1570	2.45	477	.72	84	.40	43	.10	12	.25	27	.15	17	.35	37
7,	4.5	1415	3.7	1015	2.55	513	2.7	571	4.2	1265	2.1	367	.60	67	.21	23	.10	12	.24	26	*.22	24	.31	33
8,	3.4	870	3.2	780	2.55	513	2.4	460	5.15	1772	1.85	302	.52	57	*.25	27	.05	8	.20	22	.29	31	.61	68
9,	3.1	735	2.45	477	2.55	513	2.3	426	4.3	1315	1.65	256	.56	62	.30	32	.60	67	.08	10	.14	16	.55	60
10,	3.0	692	2.25	411	3.05	713	2.15	382	3.85	1090	1.85	302	.45	48	.24	26	.18	20	*.12	14	.30	32	.50	54
11,	2.7	571	2.7	571	4.50	1415	2.05	354	5.3	1855	2.0	340	*.50	54	.25	27	.20	22	.15	17	.25	27	.50	54
12,	2.35	443	2.3	426	3.9	1115	1.95	328	4.25	1290	1.85	302	.56	62	.25	27	*.23	25	.19	21	.19	21	*1.20	164
13,	2.0	340	2.6	532	3.65	992	1.95	328	3.7	1015	1.6	245	.58	64	.25	27	.26	28	.25	27	.25	27	1.85	302
14,	1.8	290	2.9	650	3.45	895	3.8	1065	3.25	802	1.7	267	.54	59	.24	26	.25	27	.25	27	*.24	26	3.42	880
15,	1.7	267	3.7	1015	3.10	735	5.0	1690	3.35	848	2.35	443	.51	55	*.25	27	.26	28	.20	22	.22	24	2.75	590
16,	*1.6	245	5.0	1690	3.25	802	4.8	1570	3.25	802	2.1	367	.54	59	.26	28	.19	21	.20	22	.41	44	†	†
17,	*1.6	245	5.7	2095	3.05	713	4.3	1315	3.05	713	1.8	290	.48	52	.34	36	.20	22	*.23	25	.25	27	†	†
18,	*1.6	245	4.75	1552	2.85	630	3.9	1115	2.7	571	2.1	367	*.52	57	.38	41	.14	16	.26	28	.15	17	†	†
19,	*1.6	245	4.0	1165	2.60	532	3.5	920	2.4	460	2.05	354	.56	62	.46	50	*.20	22	.26	28	.24	26	†	†
20,	*1.6	245	8.8	4100	2.40	460	3.5	920	2.15	382	1.75	278	.52	57	.51	55	.26	28	.39	42	.20	22	†	†
21,	*1.6	245	7.05	2962	2.30	426	3.9	1115	2.05	354	1.55	234	.58	64	.38	41	.11	13	.20	22	*.26	28	†	†
22,	*1.6	245	5.25	1828	2.15	382	3.9	1115	2.15	382	1.35	193	.62	70	*.36	39	.21	23	.15	17	.32	34	†	†
23,	*1.6	245	4.85	1602	2.00	340	3.9	1115	2.15	382	1.30	183	.94	118	.35	37	.20	22	.22	24	.26	28	†	†
24,	*1.6	245	6.1	2345	1.65	256	3.9	1115	2.05	354	1.30	183	1.42	206	.21	23	.26	28	*.28	30	.28	30	†	†
25,	5.1	1745	6.0	2280	3.45	895	3.7	1015	1.9	315	1.05	137	*1.10	146	.15	17	.28	30	.34	36	.28	30	†	†
26,	4.3	1315	4.6	1470	4.60	1470	3.5	920	1.7	267	1.10	146	.78	92	.24	26	*33	35	.30	32	.24	26	†	†
27,	3.35	848	4.1	1215	4.20	1265	3.25	802	1.7	267	1.10	146	.64	73	.22	24	.38	41	.35	37	.34	36	†	†
28,	2.9	650	3.65	992	4.15	1240	3.05	713	2.25	411	1.15	155	.58	64	.19	21	.58	64	.30	32	*.40	43	†	†
29,	2.45	477	------	------	4.05	1190	3.1	735	2.15	382	1.30	183	.59	66	*.20	22	.49	53	.26	28	.45	48	†	†
30,	2.0	340	------	------	3.80	1065	4.8	1570	2.05	354	1.10	146	.56	62	.22	24	.44	47	.22	24	.42	45	†	†
31,	*1.9	315	------	------	3.65	992	------	------	1.85	302	------	------	.45	48	.10	12	------	------	*.28	30	------	------	†	†

*Interpolated. †Frozen; estimated average 200 sec. ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LACKAWAXEN RIVER, AT HAWLEY, WAYNE COUNTY, PA.

1910.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	†	†	2.3	426	8.05	3612	2.34	440	*4.05	1190	1.65	256	1.18	160	.18	20	.15	17	.30	32	.18	20	.88	108
2,	†	†	2.25	411	7.75	3418	2.5	494	3.40	870	1.60	245	1.30	183	.20	22	.18	20	*.26	28	.18	20	.85	103
3,	†	†	2.05	354	7.58	3307	*2.1	367	3.05	713	1.55	234	*1.15	165	.18	20	.20	22	.22	24	.22	24	.80	95
4,	†	†	2.0	340	6.6	2670	1.75	278	3.05	713	1.52	227	1.02	132	.20	22	*.41	44	.20	22	.30	32	*.70	81
5,	†	†	2.4	460	5.85	2185	1.8	290	3.88	1105	*2.10	367	.94	118	.15	17	.62	70	.18	20	.80	95	a.64	73
6,	†	†	*2.25	411	*6.25	2442	1.68	263	2.68	563	2.65	552	.80	95	.18	20	.65	74	.12	14	*1.40	202	.70	81
7,	†	†	2.1	367	6.62	2683	1.88	310	2.00	340	2.28	420	.65	74	*.23	25	.40	43	.20	22	1.40	202	.80	95
8,	†	†	2.28	420	6.3	2475	2.0	340	*2.15	382	1.92	320	.90	111	.28	30	.40	43	.24	26	1.10	146	.75	88
9,	†	†	2.25	411	5.12	1756	1.8	290	2.30	426	1.60	245	.80	95	.45	48	.16	18	*.22	24	.95	120	.82	98
10,	†	†	2.18	390	4.3	1315	*1.66	258	2.45	477	1.78	285	*.79	94	.55	60	.20	22	.20	22	.88	108	.90	111
11,	†	†	2.1	367	3.85	1090	1.52	227	2.35	443	2.20	396	.78	93	1.01	130	*.19	21	.38	41	1.20	164	*.80	95
12,	†	†	2.2	396	3.7	1015	1.44	210	2.20	396	*2.29	423	.78	93	1.05	137	.18	20	.35	38	1.48	219	.70	81
13,	†	†	2.2	396	*3.5	920	1.42	206	2.08	362	2.38	453	.72	84	.85	103	.20	22	.20	22	*1.30	183	.80	95
14,	†	†	2.15	382	3.45	895	1.35	192	1.85	302	2.30	426	.64	73	*.65	74	.52	57	.25	27	1.10	146	.70	81
15,	†	†	2.0	340	3.4	870	1.42	206	*1.75	278	2.08	362	.62	70	.44	47	.48	52	.15	17	1.02	132	.70	81
16,	†	†	1.7	267	3.1	735	1.40	202	1.65	256	2.05	354	‡*.63	71	.55	60	.35	38	*.18	20	1.08	142	.60	67
17,	†	†	1.8	290	3.1	735	*1.86	305	1.55	234	2.75	590	‡*.64	73	.30	32	.28	30	.20	22	.95	120	b1.10	146
18,	†	†	2.34	440	3.0	692	2.32	433	1.48	219	2.52	502	‡*.65	74	.50	54	*.18	20	.20	22	.86	105	*.95	120
19,	†	†	2.44	474	2.9	650	3.62	979	1.50	223	*2.47	484	‡*.67	77	.52	57	.08	10	.28	30	.75	88	.80	95
20,	†	†	*2.44	474	*3.5	920	4.05	1190	1.45	212	2.42	467	‡*.69	80	.36	39	.25	27	.32	34	*.75	88	1.10	146
21,	†	†	2.44	474	4.1	1215	3.8	1065	1.38	198	2.00	340	.70	81	*.45	48	.20	22	.28	30	.75	88	1.10	146
22,	6.5	2605	3.45	895	3.9	1115	3.4	870	*1.28	179	1.75	278	.45	48	.55	60	.22	24	.25	27	.72	84	.90	111
23,	6.1	2345	4.1	1215	3.88	1105	3.1	735	1.18	160	1.68	263	.38	41	.38	41	.15	17	*.30	32	.62	70	.90	111
24,	4.95	1662	3.9	1115	3.9	1115	*3.75	1040	1.28	179	1.48	219	*.34	36	.38	41	.36	39	.34	36	.56	62	1.10	146
25,	3.9	1115	3.68	1006	3.85	1090	4.45	1390	2.62	540	1.31	185	.30	32	.35	38	*.35	38	.28	30	.68	78	*1.25	174
26,	3.5	920	3.45	895	*3.85	1090	7.65	3352	2.88	642	*1.25	174	.22	24	.25	27	.35	38	.35	38	1.05	137	*1.35	192
27,	3.2	780	*6.15	2378	*3.5	920	5.65	2065	2.78	602	1.20	164	.28	30	.30	32	.20	22	.22	24	*1.00	128	1.50	223
28,	2.78	602	8.8	4100	3.15	758	5.15	1772	2.58	524	1.52	227	.28	30	*.25	27	.28	30	.22	24	1.00	128	1.80	290
29,	2.42	467	------	------	3.85	1090	3.85	1090	*2.29	423	1.81	292	.20	22	.20	22	.23	30	.22	24	.88	108	1.50	223
30,	*2.48	487	------	------	3.75	1040	4.75	1552	2.00	340	1.65	256	.10	12	.18	20	.36	39	*.21	23	.92	114	2.10	367
31,	2.55	513	------	------	3.5	920	------	------	1.80	290	------	------	*.14	16	.15	17	------	------	.20	22	------	------	2.50	494

a Ice interfering. b River frozen. Water running over ice.
*Interpolated.
†Frozen. Average run-off per day called 340 sec. ft.
‡Weight off.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LACKAWAXEN RIVER, AT HAWLEY, WAYNE COUNTY, PA.

1911.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.60	532	2.45	477	2.80	610	3.40	870	2.25	411	1.98	335	.96	121	.35	38	2.07	359	*3.08	726	2.30	426	1.94	325
2,	2.65	552	2.05	354	2.55	513	*3.20	780	2.75	590	1.40	202	*.88	108	.34	36	2.07	359	4.45	1390	2.15	382	1.90	315
3,	a*3.75	1040	2.15	382	2.45	477	2.90	650	2.45	477	1.13	151	.84	101	.33	35	*1.57	238	3.35	848	2.00	340	*1.80	290
4,	b 4.75	1552	2.05	354	1.70	267	2.70	571	2.25	411	*1.13	151	.66	75	.28	30	1.42	206	2.90	650	1.85	302	1.70	267
5,	3.95	1140	c*2.15	382	*1.85	302	3.00	692	1.95	328	1.13	151	.74	87	.39	42	1.12	150	2.70	571	*1.75	278	1.45	212
6,	3.30	825	2.20	396	1.90	315	5.35	1885	1.80	290	1.68	263	.74	87	*.49	53	1.10	146	2.00	340	1.72	272	1.60	245
7,	2.80	610	*2.20	396	1.80	290	5.25	1828	*1.75	278	1.78	285	.72	84	.48	52	2.00	340	2.75	590	2.78	602	1.58	241
8,	*3.10	735	2.20	396	1.65	256	4.60	1470	1.75	278	1.53	230	.68	78	.44	47	1.52	227	*2.42	467	2.35	443	1.68	263
9,	2.85	630	†	310	1.45	212	*4.15	1240	1.45	212	1.33	189	*.68	78	.40	43	1.67	260	2.00	340	2.30	426	1.62	249
10,	2.60	532	†	310	1.40	202	3.90	1115	1.48	219	1.13	151	.61	68	.30	32	*1.92	320	1.95	328	2.05	354	*1.74	276
11,	2.42	467	†	310	2.14	379	3.90	1115	1.30	183	*2.58	524	.60	67	.22	24	1.97	332	2.20	396	2.10	367	1.81	292
12,	2.25	411	†	310	*2.35	443	3.75	1040	1.30	183	4.18	1255	.61	68	.22	24	1.96	330	2.35	443	*2.25	411	1.74	276
13,	2.30	426	†	310	2.80	610	3.65	992	1.25	174	4.78	1569	.58	64	*.16	18	1.72	272	2.25	411	2.45	477	1.80	290
14,	3.35	848	†	310	3.25	802	3.55	945	1.25	174	5.33	1873	.61	68	.23	25	1.52	227	2.15	382	2.30	426	1.65	256
15,	*4.20	1265	†	310	3.38	861	4.60	1470	1.20	164	4.98	1679	.54	59	.14	16	1.32	187	*1.95	328	2.00	340	1.80	290
16,	4.50	1415	†	310	3.25	802	*4.00	1165	‡	122	3.98	1155	*.58	64	.18	20	1.22	168	1.72	272	1.90	315	3.35	848
17,	3.50	920	†	310	2.95	671	3.50	920	‡	122	3.53	935	.61	68	.18	20	1.42	206	1.55	234	1.90	315	*3.18	771
18,	3.00	692	†	310	2.60	532	3.05	713	‡	122	*2.98	684	.71	82	.14	16	.87	106	3.45	895	3.50	920	3.00	692
19,	c*3.00	692	†	310	*2.40	460	2.90	650	‡	122	2.56	517	.66	75	.06	9	.77	91	4.58	1459	*3.30	825	2.72	579
20,	d 3.00	692	†	310	2.28	420	4.80	1570	‡	122	2.33	436	.56	62	.04	7	.70	81	3.82	1075	3.05	713	2.28	420
21,	2.60	532	†	310	2.30	426	4.35	1340	‡	122	2.13	376	.61	68	.14	16	.76	89	4.10	1215	2.90	650	2.25	411
22,	2.20	396	†	310	2.88	642	5.20	1800	‡	122	1.53	230	.71	82	.09	11	.70	81	*4.65	1498	2.55	513	2.40	460
23,	2.35	443	†	310	4.15	1240	*4.85	1602	‡	122	1.46	215	*.68	78	*.11	13	.72	84	4.95	1662	2.30	426	4.30	1315
24,	1.95	328	†	310	3.10	735	4.30	1315	‡	122	1.48	219	.61	68	.13	15	*.71	82	4.35	1340	2.40	460	3.70	1015
25,	2.05	354	†	310	2.69	567	3.70	1015	‡	122	1.58	241	.71	82	.19	21	.66	75	3.80	1065	2.40	460	3.40	870
26,	1.60	245	†	310	*3.20	780	3.40	870	‡	122	1.48	219	.68	78	1.09	144	.71	82	3.49	915	*2.25	411	3.10	735
27,	1.60	245	†	310	4.20	1265	3.20	780	1.30	183	1.38	198	.58	64	.74	87	.82	98	3.40	870	2.10	367	3.50	920
28,	3.55	945	d3.00	692	e5.75	2125	2.70	571	*1.25	174	1.48	219	.58	64	2.44	474	*1.76	281	2.95	671	2.20	396	2.95	671
29,	*3.05	713	------	------	4.40	1365	2.60	532	1.25	174	1.26	175	.44	47	2.34	440	2.19	393	*2.70	571	2.30	426	2.10	367
30,	2.50	494	------	------	4.20	1265	*2.40	460	1.00	128	1.03	133	*.44	47	2.09	364	1.73	274	2.49	491	2.00	340	2.40	460
31,	2.55	513	------	------	4.10	1215	------	------	.95	120	------	------	.40	43	2.06	356	------	------	2.32	433	------	------	*2.25	411

a Ice jam. b Ice went out in a. m. c River closed. d River open. e Max. 6.3′ at 6:10 a. m., 2475 sec. ft.
*Interpolated.
†Discharge computed on ratio of run-off of Wallenpaupack Creek during this period. No gage heights taken River frozen.
‡Discharge computed on ratio of run-off of Wallenpaupack Creek during this period. Chain broken.

ESTIMATED MONTHLY DISCHARGE, LACKAWAXEN RIVER, AT HAWLEY, WAYNE COUNTY, PA.

(Drainage area 290 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a 1908.					
July,	692	27	74	0.255	0.294
August,	43	22	30	0.104	0.120
September,	164	22	33	0.114	0.127
October,	426	22	76	0.262	0.302
November,	174	54	74	0.255	0.284
December,	------	------	------	------	------
1909.					
January,	2155	245	553	1.907	2.198
February,	4100	340	1191	4.107	4.277
March,	1470	256	760	2.621	3.022
April,	1690	328	877	3.024	3.374
May,	3125	267	1048	3.614	4.166
June,	477	137	260	0.896	1.000
July,	206	48	78	0.269	0.305
August,	55	12	33	0.114	0.131
September,	67	8	26	0.090	0.100
October,	42	10	25	0.086	0.097
November,	48	12	29	0.100	0.112
December,	880	33	182	0.628	0.724
The year,	4100	8	422	1.455	19.506
b 1910.					
January,	------	------	601	2.072	2.388
February,	4100	267	710	2.448	2.549
March,	3612	650	1479	5.100	5.880
April,	3352	192	747	2.576	2.874
May,	1190	160	445	1.534	1.768
June,	590	164	334	1.152	1.285
July,	183	12	77	.265	.305
August,	137	17	45	.155	.178
September,	74	10	32	.110	.123
October,	41	14	26	.090	.104
November,	219	20	112	.386	.431
December,	494	67	142	.490	.565
The year,	------	10	396	1.365	18.450
c 1911.					
January,	1552	245	683	2.355	2.715
February,	692	------	347	1.197	1.247
March,	2475	202	679	2.341	2.699
April,	1885	460	1066	3.676	4.102
May,	590	120	209	.721	.831
June,	1873	133	499	1.721	1.920
July,	121	43	74	.255	.294
August,	474	7	82	.283	.326
September,	393	75	205	.707	.789
October,	1662	234	738	2.545	2.934
November,	920	272	446	1.538	1.716
December,	1315	212	485	1.672	1.927
The year,	2475	7	459	1.584	21.500

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a Frozen. Dec. 11-31.

b Frozen. Jan. 1-21. Discharge estimated.

c Discharge estimated Feb. 9-27 and May 16-26. Computed on ratio of run-off of Wallenpaupack creek.

WALLENPAUPACK CREEK.

DESCRIPTION OF BASIN.

Wallenpaupack creek, the largest and most important tributary of the Lackawaxen river, rises in the Pocono Plateau in the northern part of Monroe county, and flows in a general northeasterly direction forming the boundary between Pike and Wayne counties, for approximately 30 miles, to its mouth at Hawley, the total drainage area being 240 square miles, comprising 40 percent. of the drainage area of the Lackawaxen river.

Its many tributaries quite generally rise in glacial lakes or swamps, and, falling rapidly, join the main stream, whose slope is very flat for many miles to within a mile of its mouth. Its source is at an approximate elevation of 2,100 feet, and for 17 miles the slope is very rapid, averaging 56 feet per mile to Ledgedale, 13 miles above the mouth. From Wilsonville, one mile above the mouth, it descends 285 feet to the Lackawaxen river over a series of falls and rapids, while above that point the slope is less than 10 feet in 12 miles, thus affording a fortunate combination for water storage and the generation of water power.

The valley below Ledgedale is wide and swampy, while the rolling hillsides are quite largely under cultivation. Along some of the tributaries, and in the main valley, is a certain amount of timber. The watershed is comparatively narrow for some 15 miles above its mouth, widening out above to follow its numerous upper tributaries in Wayne, Pike and Monroe counties. The drainage area is sparsely inhabited and contains practically no settlements.

The creek and its tributaries are not used for water supply purposes, and to a limited extent for water power, below Wilsonville.

The average yearly rainfall over the watershed is approximately 43 inches.

The flow has been measured since July 3, 1908, at Wilsonville, one mile above the mouth.

DELAWARE BASIN—STATION NO. 4.

WALLENPAUPACK CREEK AT WILSONVILLE

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania, July 3rd, 1908, on a two span, steel, through truss, highway bridge at Wilsonville, about one mile above the mouth, but gage readings were not commenced until June 1, 1909. A 12-foot staff gage is bolted to the downstream face of the center pier, the zero of the gage being arbitrary datum. A bench mark is on a small projection on right abutment, downstream corner, 5.2 ft. down from bridge seat, the elevation being 3.923 feet above zero of gage.

Discharge measurements are made from the downstream side of the bridge, and by wading at low stages. The initial point for soundings is top edge of bridge seat, left abutment, downstream side. The channel both above and below the station is straight. The right bank overflows for a space several hundred feet wide at high stages, but the left bank does not overflow. The bed is solid rock and permanent. The gage is read twice daily by Mrs. George Heickelbeck, except for the period of the year when flashboards are placed on the dam.

During low water, gage readings have to be discontinued on account of storage of water during the night by placing flashboards on a low dam 65 feet downstream from gage. Changes in this dam have affected the gage heights from time to time, causing some uncertainty as to their accuracy.

Since the establishment of this station, nine discharge measurements have been made, three of which were taken with the flashboards on the dam. Owing to an insufficient number of discharge measurements, no rating curve has as yet been determined, and, therefore, only the discharge measurements and gage heights are published.

DISCHARGE MEASUREMENTS, WALLENPAUPACK CREEK, AT WILSONVILLE, WAYNE COUNTY, PA.

(Drainage area 240 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1908.							
1	July 3,	Grant,	103	217	0.86	1.00	186	
2	July 30,	do	108	236	0.37	1.29	88	Flash boards on dam.
3	Sept. 1,	Ryder,	111	254	0.225	1.78	57	Flash boards on dam.
4	Sept. 22,	Grant,	97	190	0.26	0.90	49	Flash boards on dam.
	1909.							
5	May 6,	Grant,	136	417	3.81	2.70	1588	
6	June 4,	do	104	213	0.99	1.12	211	
7	June 24,	do	104	213	0.95	1.08	202	
	1910.							
8	May 14,	Langenheim,	107	239	1.63	1.40	391	
	1912.							
9	May 10,	Ryder,	150	325	2.82	1.99	936	Vertical velocity msmt.

MEAN DAILY GAGE HEIGHT, IN FEET, OF WALLENPAUPACK CREEK, AT WILSONVILLE, WAYNE COUNTY, PA.

DAY.	1909.			1910.						
	JUNE.	JULY.	DEC.	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.
1,	1.20	1.02	--------	1.10	1.50	3.60	1.50	2.45	1.30	1.25
2,	1.20	1.00	--------	.95	1.50	4.10	1.48	2.28	1.29	1.04
3,	1.20	.95	--------	.70	1.48	3.90	1.40	2.12	1.26	1.00
4,	1.20	.89	--------	.68	1.44	3.60	1.30	2.00	1.25	.99
5,	1.25	.88	--------	.85	1.40	3.20	1.22	1.90	1.20	.94
6,	1.45	.88	--------	.75	1.50	3.10	1.30	1.75	1.25	.90
7,	1.48	.88	--------	.80	1.40	3.10	1.28	1.65	1.40	.90
8,	1.35	.88	--------	.85	1.30	3.45	1.45	1.50	1.28	.88
9,	1.15	.86	--------	1.05	1.30	3.25	1.42	1.45	1.20	.88
10,	1.25	.85	--------	1.00	1.40	2.75	1.28	1.50	1.15	.85
11,	1.30	.81	--------	.90	1.40	2.50	1.25	1.40	1.30	.98
12,	1.28	.80	--------	.80	1.40	2.35	1.25	1.40	1.46	.90
13,	1.26	.80	--------	.80	1.30	2.10	1.26	1.40	1.49	.85
14,	1.28	.85	--------	.80	1.20	2.10	1.25	1.35	1.42	.80
15,	1.26	--------	1.75	.80	1.10	2.10	1.22	1.25	1.29	.79
16,	1.25	--------	1.52	.90	1.30	2.10	1.15	1.10	1.29	.75
17,	1.20	--------	1.25	.80	1.40	1.90	1.10	1.05	1.48	--------
18,	1.32	--------	1.20	.85	1.40	1.75	1.38	1.00	1.50	--------
19,	1.46	--------	1.25	1.00	1.30	1.60	2.10	1.00	1.50	--------
20,	1.34	--------	1.20	1.00	1.30	1.65	2.60	1.10	1.46	--------
21,	1.26	--------	1.10	1.12	1.40	1.70	2.42	1.10	1.38	--------
22,	1.16	--------	1.00	1.94	1.50	1.90	2.24	1.12	1.24	--------
23,	1.15	--------	1.05	3.85	1.60	2.10	2.10	1.10	1.14	--------
24,	1.09	--------	1.05	3.15	1.85	2.05	1.94	1.10	1.10	--------
25,	1.08	--------	1.05	2.50	1.80	1.96	2.00	1.38	1.08	--------
26,	1.08	--------	1.00	2.50	1.80	1.96	3.94	1.64	1.02	--------
27,	1.10	--------	1.05	2.00	1.90	1.96	3.75	1.78	.98	--------
28,	1.09	--------	.95	1.80	1.84	1.80	3.05	1.66	1.39	--------
29,	1.08	--------	1.00	1.70	--------	1.70	2.65	1.54	1.50	--------
30,	1.08	--------	1.10	1.62	--------	1.60	2.48	1.40	1.35	--------
31,	--------	--------	1.10	1.50	--------	1.55	--------	1.35	--------	--------

July 15 to Dec. 14, 1909, flashboards placed on dam. No readings taken.
July 17 to Dec. 31, 1910, flashboards placed on dam. No readings taken.

MEAN DAILY GAGE HEIGHT, IN FEET, OF WALLENPAUPACK CREEK, AT WILSONVILLE, WAYNE COUNTY, PA.

1911. DAY.	JAN.	FEB.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1,	*2.98	1.75	1.30	2.15	1.45	.70	.62	.40	1.84	1.28	1.30	1.20
2,	*2.98	1.70	1.28	1.98	1.45	.80	.54	.40	1.80	1.42	1.26	1.20
3,	2.98	1.88	1.20	1.85	1.58	.70	.52	.30	1.65	1.70	1.25	1.15
4,	2.96	1.86	1.14	1.72	1.42	.62	*.58	.20	1.39	1.58	1.20	1.10
5,	3.10	1.85	1.05	1.48	1.36	.60	.65	.10	1.08	1.34	1.18	1.10
6,	3.15	1.90	0.95	1.80	1.25	.72	.62	.10	1.00	1.24	1.15	1.15
7.	3.10	1.80	0.90	2.34	1.00	.94	.58	.39	1.35	1.24	1.30	1.15
8,	2.94	1.78	0.88	2.28	1.00	.82	.55	.48	1.28	1.39	1.40	1.10
9,	2.80	1.75	0.88	2.14	.98	.72	.50	.40	1.30	1.30	1.32	1.12
10,	2.60	1.65	0.95	1.99	.96	.60	.50	.38	1.38	1.20	1.20	1.12
11,	2.49	1.68	1.21	1.88	.90	.60	.45	.30	1.32	1.18	1.12	1.16
12,	2.44	1.70	1.25	1.78	.90	1.19	.40	.20	1.40	1.32	1.10	1.16
13,	2.35	1.75	1.39	1.70	.98	2.25	.40	*.15	1.40	1.25	1.25	1.18
14,	2.10	1.78	1.64	1.68	.88	2.64	.48	.10	1.25	1.18	1.38	1.15
15.	2.10	1.80	1.69	1.70	.84	2.65	.42	------	1.12	1.10	1.32	1.18
16,	2.22	1.85	1.89	1.70	.79	2.40	.40	------	1.10	1.05	1.20	1.40
17,	2.30	1.88	1.88	1.65	.79	2.19	.40	------	1.10	1.00	1.18	1.68
18,	2.26	1.88	1.82	1.70	.80	1.95	.54	------	1.05	1.05	1.22	1.72
19,	2.15	1.88	1.68	1.65	.75	1.69	.52	------	1.15	1.49	1.60	1.64
20,	2.10	1.85	1.66	1.68	.70	1.45	.46	------	1.00	1.58	1.60	1.41
21,	2.10	1.82	1.68	2.15	.70	1.29	.48	------	.99	1.60	1.52	1.28
22,	2.00	1.75	1.80	2.42	.75	1.20	.56	------	.92	1.68	1.45	1.32
23.	2.00	1.50	1.65	2.45	.72	.99	.51	------	.85	1.84	1.32	1.50
24,	2.00	1.28	1.58	2.35	.65	.94	.50	------	.80	1.95	1.30	1.70
25,	1.92	1.22	1.60	2.22	.65	1.14	.59	------	.86	2.05	1.35	1.80
26,	1.88	0.90	1.52	1.92	.62	1.09	.55	------	.89	1.94	1.32	1.80
27,	1.85	0.99	1.50	1.69	.60	.95	.60	------	.92	1.75	1.28	1.75
28,	1.86	1.28	1.79	1.60	.58	.85	.58	------	.88	1.62	1.22	1.72
29.	1.88	------	2.34	1.55	.55	.78	.50	1.65	.89	1.52	1.20	1.72
30,	1.92	------	2.30	1.40	.55	.70	.45	1.74	1.25	1.48	1.20	1.50
31,	1.88	------	2.24	------	.55	------	.42	1.80	------	1.34	------	1.38

*Interpolated.
Aug. 15-28 inclusive, flashboards placed on dam.

SHOHOLA CREEK.

DESCRIPTION OF BASIN.

Shohola creek, a tributary of the Delaware river, and one of the largest joining that stream in Pike county, drains about 90 square miles of mountainous, forested and practically uninhabited territory in the northern portion of that county. It rises on the eastern slope of the Pocono mountains at an elevation of approximately 1,800 feet above sea level, in many lakes and ponds, abutting the watersheds of Bushkill, Wallenpaupack and Raymondskill creeks, and flows first in a general easterly direction through a glaciated country, with comparatively steep slopes, alternating with occasional swampy areas. About 12 miles above its mouth the stream turns to the northeast and enters a broad, flat, ancient lake bed, some five miles long, the maximum width being over one mile, lying at an elevation of approximately 1,150 feet above sea level. The current in this section of the stream is very sluggish and the valley flat and swampy. At the outlet of this swamp a low earth dam has been erected 10 or 15 feet high, which forms an extensive lake in the lower portion of the swamp, and is used for floating logs. Immediately below the outlet of the swamp the stream falls over a hard sandstone ledge, descending in an abrupt fall about 75 feet, and continuing for about 6 miles to its mouth through a steep and narrow valley, falling in this distance about 600 feet from the head of the falls to the Delaware river. For the most part, this valley is wild and gorge-like and uninhabited, but near the mouth, are a few farms, where the valley widens, and at the mouth up on the river bluffs is the town and railroad station of Shohola.

The main tributaries are Rattlesnake Brook, coming in about two miles above the falls from the south, and draining about 13 square miles, and Greeley creek, coming in about two miles below the falls from the north, and draining about 15 square miles. The entire stream is at present unused, except for logging. The numerous lakes on the watershed, together with many springs which feed it, contribute to make a considerable flow throughout the dry seasons.

The average yearly rainfall over this watershed is approximately 43 inches.

The flow has been measured since September 22, 1911, at Lords Valley, 15 miles above the mouth, at which point the tributary drainage area is approximately 32 square miles.

DELAWARE BASIN—STATION NO. 5.

SHOHOLA CREEK AT LORDS VALLEY.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania, on September 22nd, 1911, on a single span, iron highway bridge. A standard chain gage is fastened to the upstream guard rail of the bridge. The length of chain is 13.03 feet from the bottom of weight to center of rivet, the elevation of zero being arbitrary datum. A reference mark used as temporary bench mark has been established at a mark + on upstream hand rail 7 feet from right end, the distance of this mark above zero being 15.27 feet above zero of gage.

Discharge measurements are made from the downstream side of the bridge, or by wading, the initial point for soundings being the left end of downstream handrail. The channel both above and below the bridge is straight, but passes under it at a slight angle, with rock and gravel bottom, the right bank being high and not subject to overflow, while the left bank is only subject to overflow at extremely high stages. The gage is read twice daily by Oswald Vennie.

Since the establishment of the gage one discharge measurement has been made. Therefore, no rating curve has been determined, and only the discharge measurement and gage heights are published.

DISCHARGE MEASUREMENTS, SHOHOLA CREEK, AT LORDS VALLEY, PIKE COUNTY, PA.

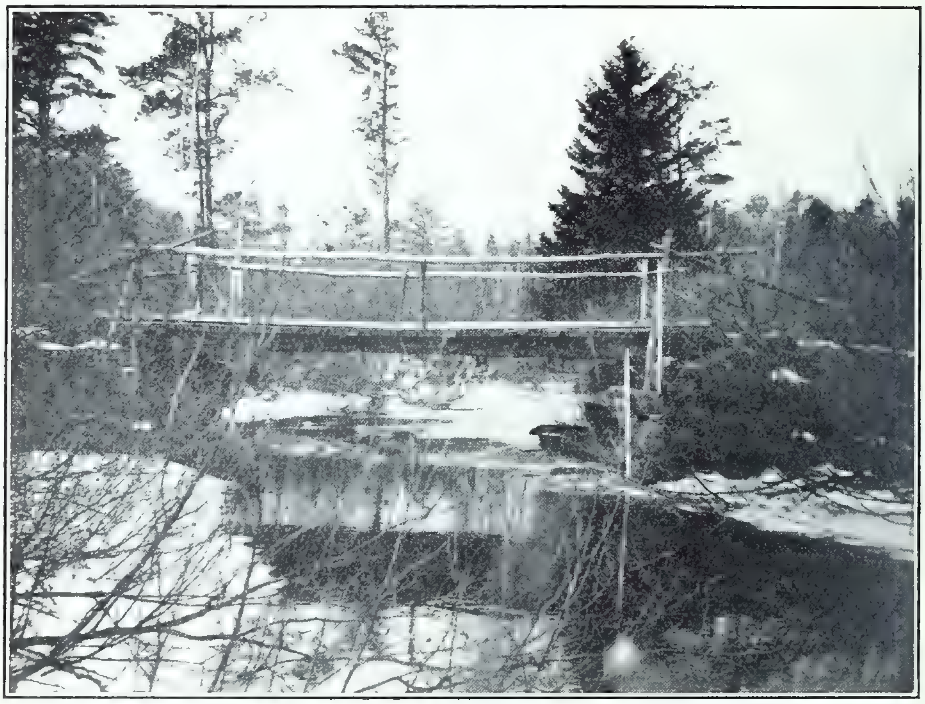
(Drainage area 32 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1911.							
1	Sept. 22,	Langenheim,	26	19.	1.71	4.75	33	From bridge.

MEAN DAILY GAGE HEIGHT, IN FEET, OF SHOHOLA CREEK, AT LORDS VALLEY, PIKE COUNTY, PA.

1911. DAY.	SEPT.	OCT.	NOV.	DEC.
1,	----------	4.94	5.03	5.04
2,	----------	5.42	5.04	4.97
3,	----------	5.13	5.04	5.00
4,	----------	5.02	5.04	5.01
5,	----------	4.97	4.96	5.01
6,	----------	4.91	4.97	4.92
7,	----------	5.08	5.30	4.94
8,	----------	5.04	5.10	4.97
9,	----------	5.02	5.01	4.97
10,	----------	4.95	5.01	5.02
11,	----------	5.03	4.97	5.03
12,	----------	5.04	4.98	4.99
13,	----------	4.98	5.23	4.96
14,	----------	4.95	5.11	4.89
15,	----------	4.91	5.07	5.10
16,	----------	4.90	5.06	5.49
17,	----------	4.88	5.03	5.42
18,	----------	5.31	5.33	5.18
19,	----------	5.65	5.43	5.10
20,	----------	5.55	5.22	5.05
21,	----------	5.49	5.15	5.01
22,	4.74	5.62	5.05	5.05
23,	4.72	5.55	5.06	5.64
24,	4.68	5.55	5.17	5.43
25,	4.71	5.58	*5.13	5.29
26,	4.82	5.53	5.08	5.25
27,	4.80	5.45	5.06	5.41
28,	4.74	5.37	5.09	5.25
29,	4.92	5.26	5.20	5.30
30,	5.04	5.21	5.09	5.23
31,	----------	5.15	----------	5.09

*Interpolated.



Gaging Station on Rattlesnake Brook, Pike County.

RATTLESNAKE BROOK.

DESCRIPTION OF BASIN.

Rattlesnake Brook is one of the largest tributaries of Shohola creek, joining that stream about two miles above the falls, and about 8 miles above its mouth, coming in from the south and draining a wild and uninhabited area of about 13 square miles. The valley of this stream is flat and swampy for three or four miles above its mouth, rising then abruptly to its sources, which are at an elevation of about 1,600 feet above sea level, where it meets the headwaters of the Bushkill and Raymondskill creeks and flows in a general northerly direction to its mouth. The stream is approximately 8 miles long.

The average yearly rainfall over this watershed in from 40 to 45 inches.

The flow has been measured since September 22, 1911, at the crossing of the Spring Brook road about two miles above the mouth of the stream.

DELAWARE BASIN--STATION NO. 6.

RATTLESNAKE BROOK AT SPRING BROOK.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania, September 22nd, 1911, at a single span, open wooden bridge, two miles above the mouth of Rattlesnake brook on the Spring Brook Road. A five-foot staff gage is fastened to the upstream side of the logs forming the right abutment, and the elevation of zero of the gage is zero of an arbitrary datum. A nail driven in a log opposite the four-foot mark on the gage, has an elevation of 4 feet above zero of the gage.

Discharge measurements are taken from the upstream side of the bridge, and by wading, while the initial point for soundings is the face of the logs forming the left abutment. The channel is straight for 30 feet above, and 80 feet below the station. Both banks are high and not subject to overflow, and the bed consists of gravel and mud. The gage is read twice daily by August Tampier.

Since the establishment of the gage one discharge measurement has been made. Therefore, no rating curve has been determined, and only the discharge measurement and gage heights are published.

DISCHARGE MEASUREMENTS, RATTLESNAKE BROOK, AT SPRING BROOK, PIKE COUNTY, PA.

(Drainage area 11 square miles.)

No.	Date.	Hydrographer.	Width.	Area of sectio..	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
1	1911. Sept. 22,	Langenheim, ---------	15.5	35	.42	1.38	14.4	From bridge.

MEAN DAILY GAGE HEIGHT, IN FEET, OF RATTLESNAKE BROOK, AT SPRING BROOK, PIKE COUNTY, PA.

1911. DAY.	SEPT.	OCT.	NOV.	DEC.
1,	----------	1.72	2.02	1.71
2,	----------	2.20	1.92	1.68
3,	----------	2.05	1.88	1.67
4,	----------	1.84	1.84	1.64
5,	----------	1.79	1.81	1.62
6,	----------	1.72	1.78	1.60
7,	----------	1.95	1.98	1.60
8,	----------	1.93	1.90	1.60
9,	----------	1.86	1.83	1.60
10,	----------	1.80	1.78	1.59
11,	----------	1.82	1.72	1.60
12,	----------	1.82	1.68	1.62
13,	----------	1.79	1.84	1.60
14,	----------	1.71	1.80	1.60
15,	----------	1.70	1.77	1.65
16,	----------	1.66	1.71	1.86
17,	----------	1.62	1.68	2.09
18,	----------	2.30	2.00	2.03
19,	----------	2.99	1.98	1.94
20,	----------	2.79	1.96	1.80
21,	----------	2.82	1.87	1.70
22,	1.38	2.92	1.82	1.74
23,	1.34	3.16	1.80	1.72
24,	1.32	2.98	1.82	1.64
25,	1.31	2.76	1.84	2.00
26,	1.46	2.62	1.80	1.79
27,	1.51	2.46	1.78	2.00
28,	1.44	2.34	1.76	2.00
29,	1.68	2.24	1.86	2.04
30,	1.86	2.14	1.80	1.78
31,	----------	2.06	----------	1.80

DELAWARE RIVER.

DESCRIPTION OF BASIN.

The Delaware river rises at an elevation of about 1,900 feet above sea level, in two branches, in the Catskill mountains of eastern New York, flowing southwesterly and uniting at Hancock on the New York-Pennsylvania boundary, at an elevation of 895 feet. From this point general southerly course is followed to the mouth in Delaware Bay, the river forming the eastern boundary of Pennsylvania, and dividing it from New York for 60 miles and from New Jersey for 170 miles.

The total length of the river is approximately 410 miles, and its drainage area above the Pennsylvania-Delaware line is 10,900 square miles. The major tributaries are the Lackawaxen, Lehigh and Schuylkill rivers, and numerous large creeks from Pennsylvania; Neversink river from New York, and Flat Brook, Paulins Kill, Pequest, Lepatcong, Pohatcong and Muscenetong rivers from New Jersey.

Its upper section is in a mountainous, sparsely inhabited and well timbered region, continuing through northern Pennsylvania and New Jersey. After cutting through the Kittatinny ridge at Delaware Water Gap it emerges into the broader valley below, where the population becomes more dense, the land is largely cultivated and the timber less general.

Above Trenton, the head of tidewater, 30 miles above Philadelphia, the stream is generally swift and shallow, flowing on a rocky bed, with numerous riffles and several considerable rapids. The slope from the northern boundary of New Jersey to Trenton is 3.5 feet per mile, and above this point to the Pennsylvania-New York line it averages 6 feet per mile. The upper section is in the once glaciated region and the tributaries drain numerous lakes, ponds and swamps throughout New York, upper Pennsylvania and New Jersey.

The stream is used considerably in its lower section for domestic and industrial supply in New Jersey and Pennsylvania, but the water power opportunities of the upper Delaware, although considerable, are undeveloped.

In Pennsylvania the cities of Philadelphia, Easton, and Chester lie on the river banks, while on tributaries are South Bethlehem, Allentown, Norristown, Pottstown, Reading, Pottsville and many smaller communities.

A portion of the anthracite coal region lies at the headwaters of the Schuylkill and Lehigh rivers, and a large limestone area is drained by the lower tributaries of these streams.

The Delaware basin in Pennsylvania is subject to an average annual precipitation of 46.1 inches, the upper part receiving 35 to 40 inches, and the major portion lying within the 45 to 50 inch zone. The area of highest precipitation in the State, 50 to 55 inches, lies at the headwaters of the Schuylkill river.

The flow is measured at Riegelsville, N. J., and Port Jervis, N. Y., the former since July 3, 1906, and the latter since October 12, 1904. A station was operated at Lambertville, N. J., from July 22, 1897, to April 1, 1908.

DELAWARE BASIN—STATION NO. 7.

DELAWARE RIVER AT PORT JERVIS, NEW YORK.

DESCRIPTION OF STATION.

This station was established by the United States Weather Bureau, October 12, 1904, on the two span, steel, through truss, toll, highway bridge between Port Jervis, New York, and Matamoras, Pennsylvania. A standard chain gage is fastened to the railing on the right span, downstream side, near the pier. The length of chain from center of rivet to bottom of weight is 36.52 feet, and the elevation of zero above mean sea level is 414.89 feet. There are three bench marks, as follows: B. M. No. 1 is a cross on door-sill of school house on Thompson street, near Water street, Port Jervis, at elevation of 27.75 feet above zero of gage; B. M. No. 2 is top of downstream left corner of pier of toll bridge, at elevation of 29.92 feet above zero of gage; B. M. No. 3 is top of right abutment of toll bridge at apex of angle caused by junction of downstream wingwall, at elevation of 29.02 feet above zero of gage.

Discharge measurements are made from either the upstream or downstream side of bridge, and the initial point for soundings is the top edge of bridge seat of Port Jervis abutment. The channel of the river above and below the station is straight, with high banks, which do not overflow, and a bed of permanent rocks and gravel. This gage is read once daily by Jacob Miller, toll collecter at the bridge, and by co-operation with the Weather Bureau, weekly reports are received by the Water Supply Commission.

Considerable difficulty has been experienced in maintaining the data of the gage constant. September 4, 1908, a careful investigation was made and in order to avoid negative readings, a change in the original datum, as nearly as could be determined of about 2 feet were made. A correction varying from +1.7 feet to 2.0 feet has been applied to gage heights prior to September 4th, 1908, so that all gage heights published refer to the same datum.

The gaging section is affected by ice to greater or less extent each winter.

Since the establishment of this gage, 32 discharge measurements have been made. These measurements have been made by the United States Geological Survey, New York State Engineer, and the Water Supply Commission of Pennsylvania.

DISCHARGE MEASUREMENTS, DELAWARE RIVER, AT PORT JERVIS, NEW YORK.

(Drainage area 3,250 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1902.							
1	June 28,	U. S. G. S.,	--	--	--	--	4629	Water surface 29.3′ from top of upstream handrail 470′ from left abutment.
2	Sept. 2,	do	--	--	--	--	1501	do. 30.6′.
	1906.							
3	Nov. 2,	Hoyt,	569	2680	1.62	3.49	4350	
4	Nov. 5,	Cook,	568	2380	1.46	2.99	3480	
5	Nov. 10,	Cook,	540	2100	1.16	2.59	2440	
6	Nov. 12,	Cook,	550	2240	1.26	2.79	2820	
7	Nov. 19,	Cook,	590	2890	2.61	3.89	7540	
	1907.							
8	Jan. 5,	Cook,	605	4410	3.49	6.28	15400	
	1908.							
9	May 10,	Henshaw,	627	4850	4.23	7.08	20500	
10	May 11,	Henshaw,	611	4310	3.64	6.27	15700	
11	Aug. 29,	Ryder,	503	1200	0.34	1.00	407	
12	Sept. 3,	Bolster,	490	1060	0.29	0.85	310	Msmt. from upstream side of bridge.
13	Sept. 5,	Stevens,	491	1080	0.29	0.89	315	do
14	Sept. 20,	Grant,	--	--	--	0.69	226	Port Jervis span measured by wading below bridge.
	1909.							
15	July 6,	Grant,	529	1607	0.63	1.85	1006	
16	Aug. 23,	N. Y. State Eng.,	498	1590	0.55	1.65	879	
17	Nov. 16,	do	264	610	0.58	0.90	354	
18	Nov. 17,	do	263	689	0.63	1.07	432	
	1910.							
19	Mar. 1,	Hoyt,	646	7850	7.55	11.80	59300	Float measurement.
20	Mar. 2,	Hoyt,	641	6760	7.22	10.90	48800	
21	Mar. 3,	Sherrard,	642	6676	6.28	10.20	42000	
22	Mar. 3,	Hoyt,	646	6190	6.70	9.82	41400	
23	Mar. 4,	Sherrard,	642	5677	5.29	8.68	30000	
24	Mar. 4,	Hoyt,	646	5730	5.63	8.55	32200	
25	Mar. 7,	Hoyt,	628	5490	5.26	8.14	28900	
26	Mar. 9,	Hoyt,	627	4860	4.65	7.25	22600	
27	Mar. 10,	Hoyt,	626	4360	3.96	6.38	17300	
28	May 10,	Covert,	579	2880	1.96	3.91	5650	
29	May 13,	Langenheim,	--	2526	1.81	3.55	4568	
30	July 30,	Hoyt,	460	891	0.78	1.37	654	
31	Sept. 6,	Reckord,	535	1881	0.87	2.20	1636	
	1911.							
32	June 21,	DeGolyer,	582	2610	1.88	3.74	4910	

DISCHARGE TABLE FOR DELAWARE RIVER, AT PORT JERVIS, N. Y. TO DECEMBER 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.60	180	.40	4100	.20	15680	9.00	35000	.80	57460
.70	225	.50	4380	.30	16240	.10	35770	.90	58280
.80	275	.60	4670	.40	16810	.20	36540	12.00	59100
.90	330	.70	4970	.50	17390	.30	37310	.10	59920
1.00	390	.80	5280	.60	17990	.40	38090	.20	60740
.10	450	.90	5600	.70	18600	.50	38870	.30	61560
.20	520	4.00	5930	.80	19320	.60	38650	.40	62380
.30	590	.10	6270	.90	19850	.70	40430	.50	63200
.40	665	.20	6620	7.00	20500	.80	41220	.60	64020
.50	740	.30	6980	.10	21160	.90	42010	.70	64840
.60	825	.40	7350	.20	21830	10.00	42800	.80	65660
.70	920	.50	7730	.30	22510	.10	43600	.90	66480
.80	1030	.60	8120	.40	23200	.20	44400	13.00	67300
.90	1150	.70	8520	.50	23900	.30	45200	.10	68120
2.00	1280	.80	8930	.60	24610	.40	46000	.20	68940
.10	1420	.90	9350	.70	25320	.50	46810	.20	69760
.20	1570	5.00	9780	.80	26040	.60	47620	.40	70580
.30	1730	.10	10220	.90	26770	.70	48440	.50	71400
.40	1900	.20	10670	8.00	27500	.80	49260	.60	72220
.50	2080	.30	11130	.10	28240	.90	50080	.70	73040
.60	2260	.40	11590	.20	28980	11.00	50900	.80	73860
.70	2450	.50	12060	.30	29720	.10	51720	.90	74680
.80	2650	.60	12540	.40	30470	.20	52540	14.00	75500
.90	2860	.70	13030	.50	31220	.30	53360	15.00	84000
3.00	3080	.80	13540	.60	31970	.40	54180	16.00	92700
.10	3320	.90	14060	.70	32720	.50	55000	17.00	101500
.20	3570	6.00	14590	.80	33480	.60	55820	.70	107660
.30	3830	.10	15130	.90	34240	.70	56640	18.00	110300

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DELAWARE RIVER, AT PORT JERVIS, N. Y.

1904.	OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.
1,	--------	--------	3.3	3830	3.1	3320
2,	--------	--------	3.2	3570	3.1	3320
3,	--------	--------	3.1	3320	3.1	3320
4,	--------	--------	3.0	3080	3.1	3320
5,	--------	--------	3.0	3080	2.9	2860
6,	--------	--------	2.9	2860	2.8	2650
7,	--------	--------	2.8	2650	2.6	2260
8,	--------	--------	2.9	2860	2.6	2260
9.	--------	--------	2.8	2650	2.6	2260
10,	--------	--------	2.8	2650	2.5	2080
11,	--------	--------	2.7	2450	2.5	2080
12,	--------	--------	2.7	2450	2.5	2080
13,	2.7	2450	2.7	2450	2.7	2450
14,	3.8	5280	2.9	2860	2.9	2860
15,	3.7	4970	2.8	2650	2.6	2260
16,	3.3	3830	2.8	2650	3.1	3320
17,	3.1	3320	2.8	2650	2.8	2650
18,	3.0	3080	2.9	2860	2.8	2650
19,	2.9	2860	2.8	2650	2.9	2860
20,	2.8	2650	2.8	2650	2.9	2860
21,	3.0	3080	2.8	2650	2.7	2450
22,	10.7	48440	3.6	4670	2.9	2860
23,	7.5	23900	3.2	3570	2.7	2450
24,	6.1	15130	4.0	5930	2.8	2650
25,	5.3	11130	3.8	5280	3.1	3320
26,	4.7	8520	3.8	5280	3.6	4670
27,	4.5	7730	3.6	4670	3.7	4970
28,	4.2	6620	3.3	3830	3.8	5280
29,	3.9	5600	3.1	3320	7.5	23900
30,	3.5	4380	3.1	3320	5.6	12540
31,	3.4	4100	--------	--------	5.0	9780

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DELAWARE RIVER, AT PORT JERVIS, N. Y.

1905.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.5	7730	2.9	2860	*		8.0	27500	3.2	3570	2.3	1730	1.9	1150	2.6	2260	3.8	5280	2.7	2450	2.8	2650	6.0	14590
2.	4.6	8120	2.7	2450	*		7.0	20500	3.2	3570	2.1	1420	1.9	1150	2.6	2260	3.0	3080	2.6	2260	2.8	2650	4.7	8520
3,	4.9	9350	3.3	3830	*		6.1	15130	3.1	3320	2.1	1420	2.0	1280	2.5	2080	2.9	2860	2.5	2080	2.7	2450	4.6	8120
4,	5.0	9780	3.4	4100	*		5.6	12540	3.0	3080	2.1	1420	3.3	3830	2.4	1900	3.9	5600	2.5	2080	2.6	2260	10.3	45200
5,	4.1	6270	3.4	4100	*		5.4	11590	2.9	2860	2.1	1420	2.8	2650	2.3	1730	5.7	13030	2.7	2450	2.6	2260	7.8	26040
6,	4.1	6270	*		*		5.6	12540	2.8	2650	2.1	1420	2.4	1900	2.1	1420	4.9	9350	2.6	2260	2.6	2260	6.3	16240
7.	5.4	11590	*		*		6.2	15680	2.9	2860	2.2	1570	2.2	1570	2.0	1280	4.3	6980	2.5	2080	2.7	2450	5.5	12060
8,	9.5	38870	*		*		5.8	13540	3.0	3080	3.3	3830	2.1	1420	1.9	1150	3.8	5280	2.3	1730	3.2	3570	5.1	10220
9,	7.8	26040	*		*		5.4	11590	3.0	3080	3.1	3320	2.1	1420	2.1	1420	3.4	4100	2.2	1570	3.1	3320	4.7	8520
10,	6.5	17390	*		*		5.1	10220	2.8	2650	2.9	2860	1.9	1150	1.9	1150	3.2	3570	2.2	1570	3.1	3320	4.4	7350
11,	5.7	13030	*		*		5.0	9780	2.7	2450	2.7	2450	2.1	1420	1.9	1150	2.9	2860	2.1	1420	3.0	3080	4.1	6270
12,	5.1	10220	*		*		5.0	9780	2.7	2450	2.7	2450	1.9	1150	2.1	1420	4.5	7730	3.2	3570	2.9	2860	3.9	5600
13,	5.1	10220	*		*		5.3	11130	2.8	2650	2.6	2260	1.9	1150	2.2	1570	5.8	13540	4.3	6980	2.8	2650	3.8	5280
14,	5.9	14060	*		*		4.9	9350	3.0	3080	2.8	2650	1.8	1030	1.9	1150	4.7	8520	4.1	6270	2.8	2650	3.6	4670
15,	4.8	8930	*		*		4.6	8120	2.8	2650	2.8	2650	1.8	1030	2.4	1900	4.1	6270	3.8	5280	2.7	2450	3.4	4100
16,	4.8	8930	*		*		4.5	7730	2.8	2650	2.7	2450	1.9	1150	2.4	1900	3.7	4970	3.2	3570	2.7	2450	3.3	3830
17,	4.6	8120	*		*		4.2	6620	2.8	2650	2.6	2260	1.9	1150	3.0	3080	3.4	4100	3.0	3080	2.6	2260	3.2	3570
18,	3.7	4970	*		*		4.1	6270	2.9	2860	2.5	2080	1.9	1150	3.1	3320	3.4	4100	2.9	2860	2.6	2260	2.9	2860
19,	3.8	5280	*		5.1	10220	4.0	5930	2.9	2860	2.1	1420	1.8	1030	2.8	2650	3.4	4100	2.8	2650	2.6	2260	2.9	2860
20,	4.0	5930	*		10.7	48440	3.8	5280	2.8	2650	2.2	1570	1.7	920	2.4	1900	4.1	6270	2.9	2860	2.5	2080	3.0	3080
21,	3.8	5280	*		9.5	38870	3.9	5600	2.8	2650	2.4	1900	1.6	825	2.2	1570	4.1	6270	4.1	6270	2.4	1900	3.2	3570
22,	3.6	4670	*		8.5	31220	4.1	6270	2.7	2450	2.4	1900	1.9	1150	2.1	1420	4.9	9350	4.0	5930	2.3	1730	4.1	6270
23,	3.4	4100	*		8.1	28240	4.1	6270	2.7	2450	2.6	2260	1.9	1150	2.1	1420	4.3	6980	3.6	4670	2.3	1730	4.6	8120
24,	3.2	3570	*		7.7	25320	3.8	5280	2.6	2260	2.8	2650	1.7	920	2.0	1280	3.8	5280	3.3	3830	2.3	1730	4.2	6620
25,	3.0	3080	*		7.8	26040	3.6	4670	2.6	2260	2.8	2650	1.7	920	2.0	1280	3.6	4670	3.3	3830	2.3	1730	3.7	4970
26,	3.0	3080	*		11.6	55820	3.5	4380	2.5	2080	2.6	2260	1.6	825	2.1	1420	3.3	3830	3.2	3570	2.3	1730	3.5	4380
27,	3.0	3080	*		10.9	50080	3.5	4380	2.4	1900	2.4	1900	1.7	920	2.0	1280	3.2	3570	3.1	3320	2.2	1570	3.2	3570
28,	3.0	3080	*		11.0	50900	3.4	4100	2.5	2080	2.3	1730	1.7	920	1.9	1150	3.0	3080	3.1	3320	2.2	1570	3.1	3320
29,	2.7	2450			9.6	39650	3.3	3830	2.4	1900	2.1	1420	1.7	920	1.9	1150	2.9	2860	3.0	3080	2.4	1900	3.2	3570
30,	3.2	3570			9.2	36540	3.3	3830	2.4	1900	2.0	1280	1.7	920	1.7	920	2.8	2650	2.9	2860	6.0	14590	3.7	4970
31,	3.1	3320			8.8	33480	------	------	2.3	1730	------	------	2.2	1570	1.9	1150	------	------	2.8	2650	------	------	3.7	4970

*Frozen.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DELAWARE RIVER, AT PORT JERVIS, N. Y.

1906.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.5	4380	3.7	4970	3.7	4970	6.9	19850	3.6	4670	4.2	6620	3.3	3830	3.2	3570	2.6	2260	1.8	1030	3.5	4380	3.3	3830
2,	3.1	3320	3.6	4670	3.2	3570	6.2	15680	3.5	4380	4.0	5930	3.5	4380	2.9	2860	2.5	2080	2.0	1280	3.5	4380	3.3	3830
3,	3.0	3080	3.5	4380	3.5	4380	5.7	13030	3.5	4380	3.7	4970	3.8	5280	2.7	2450	2.5	2080	2.0	1280	3.4	4100	3.1	3320
4,	2.9	2860	3.5	4380	9.1	35770	5.7	13030	3.6	4670	3.6	4670	4.0	5930	3.3	3830	2.4	1900	1.8	1030	3.2	3570	2.7	2450
5,	3.4	4100	2.7	2450	9.3	37310	6.2	15680	3.6	4670	3.3	3830	4.1	6270	3.1	3320	2.3	1730	1.8	1030	3.0	3080	2.9	2860
6,	4.3	6980	2.8	2650	6.3	16240	7.1	21160	3.5	4380	3.9	5600	3.8	5280	3.0	3080	2.2	1570	2.1	1420	3.0	3080	2.8	2650
7,	3.7	4970	2.6	2260	5.6	12540	7.3	22510	3.4	4100	4.5	7730	3.4	4100	2.7	2450	2.0	1280	2.2	1570	3.0	3080	4.9	9350
8,	3.3	3830	2.5	2080	5.1	10220	6.3	16240	3.4	4100	4.2	6620	3.1	3320	2.6	2260	1.9	1150	2.1	1420	2.8	2650	5.0	9780
9,	3.1	[illegible]	2.4	1900	4.8	8930	5.9	14060	3.4	4100	4.1	6270	2.9	2860	3.5	4380	1.9	1150	2.1	1420	2.7	2450	3.9	5600
10,	2.8	2650	*		4.8	8930	6.9	19850	3.5	4380	3.9	5600	2.8	2650	3.2	3570	1.9	1150	2.2	1570	2.6	2260	3.5	4380
11,	2.9	2860	*		4.4	7350	9.0	35000	3.5	4380	4.9	9350	2.8	2650	2.9	2860	1.8	1030	2.1	1420	2.6	2260	4.1	6270
12,	2.8	2650	*		4.1	6270	8.1	28240	3.5	4380	4.8	8930	2.6	2260	2.7	2450	1.8	1030	2.1	1420	2.8	2650	4.0	5930
13,	3.3	3830	*		4.0	5930	7.1	21160	3.3	3830	4.1	6270	2.4	1900	2.5	2080	1.8	1030	2.1	1420	3.0	3080	3.7	4970
14,	3.4	4100	*		3.7	4970	6.5	17390	3.2	3570	3.8	5280	2.3	1730	2.4	1900	2.0	1280	2.1	1420	3.0	3080	3.6	4670
15.	3.6	4670	*		3.5	4380	7.9	26770	3.2	3570	3.6	4670	2.2	1570	2.3	1730	2.1	1420	2.0	1280	2.9	2860	3.7	4970
16,	3.3	3830	*		3.5	4380	11.4	54180	3.2	3570	3.5	4380	2.2	1570	2.2	1570	2.1	1420	1.9	1150	2.8	2650	3.7	4970
17,	3.3	3830	*		3.3	3830	8.9	34240	3.1	3320	3.7	4970	2.2	1570	2.1	1420	2.1	1420	1.9	1150	2.8	2650	4.3	6980
18,	3.2	3570	*		3.3	3830	7.4	23200	3.3	3830	5.2	10670	2.2	1570	2.0	1280	2.2	1570	1.9	1150	2.9	2860	4.1	6270
19,	3.1	3320	*		3.2	3570	6.5	17390	3.8	5280	6.3	16240	2.3	1730	1.9	1150	2.2	1570	1.9	1150	3.9	5600	3.6	4670
20,	3.1	3320	*		3.2	3570	5.9	14060	3.5	4380	5.7	13030	2.3	1730	1.9	1150	2.2	1570	2.0	1280	6.7	18600	3.3	3830
21,	2.9	2860	*		2.9	2860	5.5	12060	3.3	3830	5.5	12060	2.3	1730	1.9	1150	1.9	1150	5.2	10670	5.9	14060	3.2	3570
22,	3.3	3830	*		3.0	3080	5.1	10220	3.1	3320	4.7	8520	3.3	3830	2.0	1280	2.3	1730	4.7	8520	5.7	13030	4.0	5930
23,	5.7	13030	5.7	13030	2.9	2860	4.8	8930	2.9	2860	4.4	7350	3.5	4380	2.9	2860	2.2	1570	4.0	5930	5.3	11130	3.8	5280
24,	6.3	16240	5.1	10220	2.7	2450	5.1	10220	2.9	2860	4.1	6270	3.5	4380	2.8	2650	2.1	1420	3.7	4970	4.8	8930	3.3	3830
25,	6.7	18600	5.0	9780	2.7	2450	4.7	8520	2.8	2650	3.9	5600	3.2	3570	2.5	2080	2.4	1900	3.6	4670	4.6	8120	2.8	2650
26,	5.5	12060	6.2	15680	2.7	2450	4.5	7730	2.7	2450	3.6	4670	2.9	2860	2.4	1900	2.1	1420	4.0	5930	4.1	6270	2.8	2650
27,	4.8	8930	5.6	12540	3.0	3080	4.3	6980	2.6	2260	3.3	3830	2.6	2260	2.4	1900	1.9	1150	4.2	6620	4.0	5930	3.0	3080
28,	4.7	8520	4.7	8520	4.7	8520	4.1	6270	4.2	6620	3.1	3320	2.5	2080	2.3	1730	1.8	1030	3.8	5280	3.8	5280	3.3	3830
29,	4.6	8120	------	------	7.4	23200	3.9	5600	5.5	12060	3.0	3080	2.5	2080	3.7	4970	1.8	1030	3.9	5600	3.7	4970	3.3	3830
30,	4.1	6270	------	------	6.4	16810	3.7	4970	5.4	11590	3.4	4100	2.5	2080	3.3	3830	1.8	1030	3.7	4970	3.5	4380	3.3	3830
31.	3.8	5280	------	------	6.5	17390	------	------	5.6	12540	------	------	3.1	3320	2.9	2860	------	------	3.5	4380	------	------	3.4	4100

*Frozen.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DELAWARE RIVER, AT PORT JERVIS, N. Y.

1907.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	9.5	35000	3.4	4100	4.1	6270	5.4	11590	4.2	6620	3.0	3080	2.7	2450	1.5	740	2.5	2080	3.3	3830	4.8	8930	3.4	4100
2,	7.2	21830	3.3	3830	4.3	6980	5.0	9780	4.0	5930	3.0	3080	2.7	2450	1.4	665	2.6	2260	3.2	3570	4.4	7350	3.3	3830
3,	5.9	14060	3.4	4100	4.6	8120	4.5	7730	4.0	5930	3.9	5600	2.5	2080	1.5	740	2.6	2260	2.9	2860	5.2	10670	3.3	3830
4,	5.5	12060	3.5	4380	4.5	7730	4.3	6980	3.8	5280	3.9	5600	2.3	1730	1.3	590	2.6	2260	2.8	2650	6.6	17990	3.1	3320
5,	6.2	15680	3.2	3570	4.1	6270	4.1	6270	4.1	6270	3.7	4970	2.2	1570	1.4	665	2.1	1420	3.3	3830	5.8	13540	2.8	2650
6,	5.7	13030	3.3	3830	3.8	5280	3.8	5280	4.1	6270	3.7	4970	2.0	1280	1.3	590	1.7	920	4.5	7730	5.3	11130	2.9	2860
7,	5.1	10220	2.9	2860	3.9	5600	3.8	5280	3.9	5600	3.7	4970	2.1	1420	1.4	665	2.2	1570	4.1	6270	8.0	27500	2.8	2650
8,	5.1	10220	3.0	3080	4.1	6270	3.6	4670	4.2	6620	3.8	5280	2.1	1420	1.4	665	1.9	1150	3.7	4970	10.7	48440	2.8	2650
9,	6.7	18600	2.9	2860	4.4	7350	3.6	4670	4.4	7350	3.5	4380	2.4	1900	2.2	1570	1.8	1030	4.0	5930	8.2	28980	2.9	2860
10,	5.7	13030	2.7	2450	4.3	6980	3.9	5600	4.3	6980	3.4	4100	2.0	1280	2.1	1420	1.6	825	4.5	7730	6.8	19220	3.9	5600
11,	5.2	10670	2.9	2860	4.6	8120	4.0	5930	4.2	6620	3.3	3830	2.0	1280	2.2	1570	1.8	1030	3.9	5600	6.1	15130	13.1	68120
12,	4.9	9350	2.9	2860	4.0	5930	3.9	5600	3.9	5600	3.1	3320	1.9	1150	2.2	1570	3.0	3080	3.8	5280	5.6	12540	9.5	38870
13,	4.6	8120	*†2.9	2860	4.2	6620	4.2	6620	3.8	5280	3.1	3320	2.1	1420	2.3	1730	3.7	4970	3.5	4380	5.1	10220	7.1	21160
14,	4.4	7350	*2.8	2650	4.4	7350	4.4	7350	3.5	4380	2.9	2860	2.4	1900	2.3	1730	3.2	3570	3.5	4380	4.7	8520	6.1	15130
15,	4.4	7350	*3.0	3080	5.4	11590	4.2	6620	3.6	4670	2.9	2860	2.4	1900	2.5	2080	2.6	2260	3.2	3570	4.4	7350	5.8	13540
16,	4.5	7730	4.0	5930	7.2	21830	4.1	6270	3.4	4100	2.8	2650	2.1	1420	2.4	1900	2.2	1570	3.0	3080	4.1	6270	5.4	11590
17,	4.3	6980	3.8	5280	6.6	17990	3.8	5280	3.5	4380	2.6	2260	2.0	1280	2.5	2080	2.2	1570	3.0	3080	3.9	5600	5.4	11590
18,	3.5	4380	3.9	5600	6.7	18600	3.8	5280	3.9	5600	2.5	2080	1.9	1150	2.2	1570	1.9	1150	2.8	2650	3.7	4970	4.8	8930
19,	3.7	4970	4.0	5930	7.3	22510	3.8	5280	3.6	4670	2.4	1900	2.0	1280	2.2	1570	2.0	1280	2.8	2650	3.6	4670	4.4	7350
20,	4.3	6980	3.9	5600	5.9	14060	3.6	4670	3.5	4380	2.4	1900	1.8	1030	2.3	1730	1.9	1150	2.5	2080	3.6	4670	4.2	6620
21,	6.5	17390	3.8	5280	5.4	11590	3.5	4380	3.4	4100	2.6	2260	2.2	1570	2.5	2080	2.0	1280	2.6	2260	3.6	4670	4.0	5930
22,	5.2	10670	4.2	6620	5.7	13030	3.4	4100	3.2	3570	2.6	2260	1.9	1150	2.4	1900	2.0	1280	2.7	2450	3.6	4670	3.9	5600
23,	4.3	6980	4.2	6620	7.5	23900	3.3	3830	3.1	3320	2.5	2080	1.9	1150	2.5	2080	2.0	1280	2.7	2450	3.6	4670	3.8	5280
24,	4.3	6980	4.0	5930	8.9	34240	3.4	4100	3.0	3080	2.2	1570	1.8	1030	2.3	1730	2.6	2260	2.7	2450	3.6	4670	7.0	20500
25,	3.7	4970	3.8	5280	8.0	27500	4.3	6980	3.0	3080	2.3	1730	1.8	1030	2.4	1900	2.9	2860	2.6	2260	3.4	4100	8.4	30470
26,	3.8	5280	2.7	2450	7.1	21160	4.7	8520	2.9	2860	2.2	1570	1.7	920	2.3	1730	2.9	2860	2.5	2080	3.5	4380	6.7	18600
27,	3.8	5280	3.2	3570	6.4	16810	4.3	6980	3.0	3080	2.1	1420	1.7	920	2.4	1900	2.6	2260	2.4	1900	3.6	4670	6.0	14590
28,	3.8	5280	4.1	6270	6.4	16810	4.6	8120	3.6	4670	2.2	1570	1.6	825	2.3	1730	2.3	1730	2.5	2080	3.5	4380	5.4	11590
29,	3.6	4670	------	------	6.6	17990	4.3	6980	3.3	3830	2.2	1570	1.6	825	2.5	2080	2.6	2260	6.6	17990	3.4	4100	5.7	13030
30,	3.3	3830	------	------	6.5	17390	4.1	6270	3.2	3570	2.4	1900	1.4	665	2.5	2080	3.0	3080	6.5	17390	3.6	4670	5.8	13540
31,	3.5	4380	------	------	6.0	14590	------	------	3.1	3320	------	------	1.4	665	2.6	2260	------	------	5.5	12060	------	------	5.8	13540

*Interpolated.
†Frozen.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DELAWARE RIVER, AT PORT JERVIS, N. Y.

1908.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.6	12540	2.4	1900	3.7	4970	7.0	20500	5.2	10670	3.5	4380	1.5	740	1.5	740	0.9	330	2.3	1730	3.1	3320	1.9	1150
2,	5.1	10220	3.0	3080	3.4	4100	6.6	17990	6.5	17390	3.3	3830	1.4	665	1.5	740	0.9	330	2.0	1280	2.9	2860	1.8	1030
3,	4.7	8520	3.1	3320	3.1	3320	6.3	16240	5.9	14060	3.2	3570	1.6	825	1.5	740	0.9	330	1.7	920	2.7	2450	1.8	1030
4,	4.3	6980	4.9	9350	3.3	3830	5.6	12540	5.8	13540	3.0	3080	1.5	740	1.3	590	0.9	330	1.6	825	2.5	2080	1.6	825
5.	4.1	6270	4.7	8520	3.6	4670	5.1	10220	5.3	11130	2.9	2860	2.2	1570	1.3	590	0.9	330	1.6	825	2.3	1730	1.6	825
6,	3.7	4970	4.6	8120	3.4	4100	4.8	8930	4.8	8930	2.7	2450	2.2	1570	1.2	520	0.9	330	1.5	740	2.3	1730	1.6	825
7,	3.2	3570	4.2	6620	3.1	3320	4.9	9350	4.7	8520	2.6	2260	2.0	1280	1.3	590	0.8	275	1.5	740	2.3	1730	1.7	920
8,	3.4	4100	3.8	5280	3.1	3320	4.9	9350	8.0	27500	2.6	2260	1.9	1150	1.3	590	0.7	225	1.3	590	2.2	1570	2.2	1570
9,	3.7	4970	3.3	3830	3.3	3830	6.0	14590	7.9	26770	2.4	1900	1.8	1030	1.3	590	0.7	225	1.2	520	2.2	1570	2.2	1570
10,	3.8	5280	3.1	3320	3.1	3320	7.2	21830	7.1	21160	2.3	1730	1.7	920	1.3	590	0.8	275	1.2	520	2.2	1570	2.9	2860
11,	3.3	3830	2.6	2260	3.1	3320	6.1	15130	6.3	16240	2.3	1730	1.6	825	1.3	590	0.8	275	1.2	520	2.1	1420	2.4	1900
12,	3.3	3830	2.6	2260	3.2	3570	5.5	12060	5.6	12540	2.4	1900	1.5	740	1.3	590	0.9	330	1.2	520	2.1	1420	3.0	3080
13,	5.7	13030	3.4	4100	4.0	5930	5.3	11130	5.2	10670	2.2	1570	1.4	665	1.2	520	0.8	275	1.3	590	2.2	1570	2.2	1570
14,	6.4	16810	4.7	8520	6.4	16810	4.9	3350	4.8	8930	2.1	1420	1.4	665	1.2	520	0.8	275	1.3	590	2.3	1730	2.3	1730
15,	5.5	12060	5.3	11130	9.4	38090	4.6	8120	4.5	7730	2.1	1420	1.4	665	1.1	450	0.7	225	1.3	590	2.3	1730	2.4	1900
16,	4.9	9350	13.4	70580	8.7	32720	4.9	9350	5.1	10220	2.3	1730	1.4	665	1.1	450	0.7	225	1.3	590	2.1	1420	2.6	2260
17,	4.5	7730	8.4	30470	7.7	25320	5.2	10670	4.4	7350	2.4	1900	1.4	665	1.1	450	0.7	225	1.3	590	2.2	1570	2.6	2260
18,	4.1	6270	6.2	15680	6.3	16240	5.0	9780	4.2	6620	2.3	1730	1.4	665	0.9	330	0.8	275	1.2	520	2.2	1570	2.4	1900
19,	3.8	5280	5.3	11130	6.0	14590	5.0	9780	4.0	5930	2.2	1570	1.2	520	1.1	450	0.7	225	1.2	520	2.1	1420	2.2	1570
20,	3.8	5280	4.7	8520	6.9	19850	5.1	10220	3.7	4970	2.1	1420	1.3	590	1.1	450	0.7	225	1.1	450	2.2	1570	2.3	1730
21,	3.5	4380	4.2	6620	6.1	15130	4.9	9350	3.6	4670	1.9	1150	1.3	590	1.1	450	0.7	225	1.1	450	2.2	1570	2.4	1900
22,	3.4	4100	4.1	6270	5.5	12060	4.6	8120	4.1	6270	1.8	1030	1.3	590	1.1	450	0.6	180	1.1	450	2.3	1730	2.5	2080
23,	3.7	4970	3.9	5600	5.5	12060	4.4	7350	4.7	8520	1.8	1030	1.2	520	1.1	450	0.6	180	1.1	450	2.2	1570	2.6	2260
24,	3.5	4380	3.5	4380	6.0	14590	4.2	6620	5.6	12540	1.7	920	1.2	520	1.0	390	0.7	225	1.1	450	2.1	1420	2.3	1730
25,	3.4	4100	3.4	4100	8.5	31220	3.8	5280	4.8	8930	1.8	1030	1.3	590	1.0	390	0.7	225	1.1	450	2.1	1420	2.3	1730
26,	2.8	2650	3.3	3830	7.1	21160	3.6	4670	4.2	6620	1.7	920	3.4	4100	1.0	390	0.7	225	1.1	450	2.1	1420	2.2	1570
27,	2.9	2860	3.8	5280	7.6	24610	3.4	4100	3.9	5600	1.7	920	3.0	3080	1.1	450	0.7	225	2.1	1420	2.1	1420	2.2	1570
28,	3.5	4380	4.3	6980	9.0	35000	4.1	6270	3.6	4670	1.7	920	2.5	2080	1.1	450	0.7	225	2.8	2650	2.0	1280	2.3	1730
29,	3.0	3080	4.1	6270	10.7	48440	4.5	7730	3.2	3570	1.6	825	2.1	1420	1.0	390	1.4	665	3.5	4380	2.0	1280	2.3	1730
30,	2.7	2450	------	------	10.0	42800	4.4	7350	3.0	3080	1.6	825	1.8	1030	1.0	390	2.0	1280	4.4	7350	2.0	1280	2.2	1570
31,	2.4	1900	------	------	8.1	28240	------	------	3.8	5280	------	------	1.7	920	1.0	390	------	------	3.7	4970	------	------	2.0	1280

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DELAWARE RIVER, AT PORT JERVIS, N. Y.

1909.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.5	2080	3.4	4100	5.6	12540	5.0	9780	6.5	17390	2.8	2650	2.5	2080	1.5	740	1.0	390	1.1	450	1.1	450	1.5	740
2,	2.5	2080	2.9	2860	5.1	10220	4.8	8930	8.5	31220	2.8	2650	2.4	1900	1.5	740	1.0	390	1.0	390	1.1	450	1.5	740
3,	2.5	2080	2.8	2650	4.7	8520	4.4	7350	7.5	23900	2.4	1900	2.2	1570	1.4	665	0.9	330	1.0	390	1.1	450	1.5	740
4,	2.4	1900	3.2	3570	4.7	8520	4.0	5930	7.2	21830	2.0	1280	2.1	1420	1.4	665	0.9	330	1.0	390	1.1	450	1.4	665
5,	2.8	2650	3.2	3570	4.4	7350	5.1	10220	7.5	23900	2.7	2450	1.9	1150	1.4	665	0.9	330	0.8	275	1.0	390	1.4	665
6,	*10.8	49260	3.4	4100	4.1	6270	4.4	7350	7.5	23900	3.6	4670	1.7	920	1.4	665	0.9	330	0.8	275	1.0	390	1.4	665
7,	10.0	42800	6.2	15680	4.0	5930	4.1	6270	7.0	20500	3.6	4670	1.7	920	1.3	590	0.9	330	0.8	275	1.0	390	1.3	590
8,	6.8	19220	5.1	10220	4.0	5930	5.5	12060	7.4	23200	3.4	4100	1.7	920	1.2	520	0.9	330	0.8	275	1.0	390	1.5	740
9,	5.6	12540	4.4	7350	3.8	5280	5.2	10670	6.8	19220	2.8	2650	1.7	920	1.2	520	0.9	330	0.8	275	0.9	330	1.4	665
10,	5.2	10670	4.0	5930	3.8	5280	5.0	9780	5.4	11590	3.0	3080	1.6	825	1.2	520	0.9	330	0.8	275	0.9	330	1.3	590
11,	4.7	8520	4.8	8930	6.8	19220	4.6	8120	6.6	17990	3.2	3570	1.6	825	1.3	590	1.2	520	0.8	275	0.9	330	1.3	590
12,	4.5	7730	5.3	11130	5.8	13540	4.1	6270	7.0	20500	3.6	4670	1.4	665	1.3	590	1.1	450	0.8	275	0.8	275	1.3	590
13,	4.3	6980	4.5	7730	5.2	10670	3.9	5600	6.0	14590	3.4	4100	1.4	665	1.3	590	1.0	390	1.0	390	0.8	275	1.5	740
14,	3.8	5280	4.7	8520	5.0	9780	3.9	5600	5.2	10670	4.0	5930	1.4	665	1.2	520	1.0	390	1.0	390	0.8	275	2.3	1730
15,	3.5	4380	5.0	9780	4.7	8520	7.6	24610	4.8	8930	4.0	5930	1.4	665	1.2	520	1.0	390	1.2	520	1.0	390	3.0	3080
16,	3.7	4970	5.5	12060	4.5	7730	8.4	30470	5.0	9780	4.0	5930	1.4	665	1.2	520	1.0	390	1.2	520	1.0	390	3.3	3830
17,	3.9	5600	8.4	30470	4.2	6620	7.6	24610	4.7	8520	3.8	5280	1.8	1030	1.4	665	1.2	520	1.1	450	1.1	450	3.1	3320
18,	3.1	3320	7.5	23900	4.0	5930	7.0	20500	4.5	7730	4.1	6270	1.5	740	1.8	1030	1.1	450	1.0	390	1.1	450	2.8	2650
19,	2.8	2650	6.7	18600	4.0	5930	6.8	19220	4.3	6980	4.8	8930	1.5	740	2.2	1570	1.0	390	0.9	330	1.1	450	2.7	2450
20,	2.7	2450	9.2	36540	3.8	5280	6.4	16810	4.0	5930	4.2	6620	1.8	1030	2.0	1280	0.9	330	0.9	330	1.1	450	2.7	2450
21,	2.7	2450	11.7	56640	3.6	4670	5.6	12540	3.6	4670	4.0	5930	1.6	825	1.9	1150	0.9	330	0.9	330	0.9	330	2.7	2450
22,	3.1	3320	8.4	30470	3.5	4380	5.1	10220	3.8	5280	3.6	4670	1.5	740	1.8	1030	0.9	330	1.0	390	0.9	330	2.6	2260
23,	3.2	3570	7.1	21160	3.2	3570	5.0	9780	3.6	4670	3.2	3570	1.7	920	1.6	825	0.9	330	1.0	390	0.8	275	2.6	2260
24,	3.2	3570	7.2	21830	3.0	3080	5.3	11130	3.4	4100	3.0	3080	1.8	1030	1.6	825	1.0	390	1.0	390	0.8	275	2.5	2080
25,	6.7	18600	9.3	37310	3.5	4380	5.0	9780	3.0	3080	2.7	2450	1.9	1150	1.4	665	1.0	390	1.2	520	1.4	665	2.5	2080
26,	6.8	19220	7.8	26040	7.5	23900	4.5	7730	2.7	2450	2.7	2450	1.9	1150	1.3	590	1.0	390	1.2	520	1.4	665	2.5	2080
27,	5.8	13540	6.6	17990	6.5	17390	4.5	7730	3.2	3570	2.7	2450	1.9	1150	1.3	590	1.0	390	1.2	520	1.0	390	2.3	1730
28,	5.2	10670	6.2	15680	6.4	16810	4.4	7350	3.2	3570	2.7	2450	1.7	920	1.3	590	1.2	520	1.1	450	1.0	390	2.3	1730
29,	4.6	8120	------	------	6.0	14590	4.2	6620	3.4	4100	2.5	2080	1.6	825	1.2	520	1.3	590	1.1	450	1.5	740	2.1	1420
30,	4.2	6620	------	------	5.7	13030	5.0	9780	3.2	3570	2.5	2080	1.6	825	1.2	520	1.2	520	1.1	450	1.3	590	2.1	1420
31,	4.0	5930	------	------	5.3	11130	------	------	3.0	3080	------	------	1.5	740	1.0	390	------	------	1.0	390	------	------	2.3	1730

*Maximum 12.0 at 6 p. m.=59100 Sec. ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DELAWARE RIVER, AT PORT JERVIS, N. Y.

1910.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.3	1730	3.4	4100	13.0	67300	4.6	8120	5.6	12540	3.6	4670	2.4	1900	1.3	590	1.0	390	1.5	740	1.1	450	2.2	1570
2,	2.1	1420	3.3	3830	11.2	52540	4.2	6620	4.4	7350	3.4	4100	2.3	1730	1.4	665	1.2	520	1.4	665	1.1	450	2.1	1420
3,	2.1	1420	3.3	3830	10.4	46000	4.0	5930	4.1	6270	3.3	3830	2.2	1570	1.3	590	1.2	520	1.4	665	1.1	450	2.1	1420
4,	2.3	1730	3.2	3570	8.7	32720	3.7	4970	4.6	8120	3.2	3570	2.2	1570	1.3	590	1.3	590	1.2	520	1.4	665	2.0	1280
5,	2.3	1730	3.1	3320	7.9	26770	3.5	4380	4.7	8520	3.1	3320	2.0	1570	1.4	665	1.7	920	1.1	450	2.0	1280	2.0	1280
6,	2.3	1730	2.9	2860	7.5	23900	3.2	3570	4.6	8120	3.1	3320	2.0	1280	1.2	520	2.2	1570	1.0	390	2.2	1570	2.0	1280
7,	2.5	2080	2.5	2080	8.1	28240	3.9	5600	4.4	7350	3.8	5280	2.0	1280	1.3	590	2.2	1570	1.0	390	2.2	1570	*	
8.	2.8	2650	2.1	1420	9.0	35000	4.1	6270	4.4	7350	3.7	4970	1.9	1150	1.3	590	2.1	1420	1.0	390	2.1	1420	*	
9,	3.9	5600	2.5	2080	7.7	25320	4.1	6270	3.7	4970	3.5	4380	1.8	1030	1.4	665	2.1	1420	0.9	330	2.2	1570	*	
10,	3.9	5600	2.7	2450	6.6	17990	3.8	5280	3.4	4100	3.3	3830	1.8	1030	1.4	665	1.8	1030	0.8	275	2.3	1730	*	
11,	3.7	4970	3.1	3320	5.8	13540	3.4	4100	4.0	5930	3.4	4100	1.7	920	2.7	2450	1.7	920	0.8	275	2.2	1570	*	
12,	3.6	4670	3.1	3320	5.5	12060	3.4	4100	3.8	5280	4.0	5930	1.7	920	2.4	1900	1.6	825	0.8	275	2.1	1420	*	
13,	3.6	4670	3.1	3320	5.3	11130	3.7	4970	3.6	4670	4.2	6620	1.7	920	1.9	1150	1.5	740	0.8	275	3.1	3320	*	
14,	3.6	4670	3.0	3080	5.3	11130	3.5	4380	3.4	4100	4.0	5930	1.7	920	1.8	1030	1.4	665	0.7	225	2.8	2650	*	
15,	3.5	4380	3.0	3080	5.1	10220	3.2	3570	3.2	3570	3.6	4670	1.6	825	1.6	825	1.4	665	0.7	225	2.7	2450	*	
16,	3.5	4380	2.7	2450	4.8	8930	3.2	3570	3.1	3320	3.5	4380	1.6	825	1.4	665	1.4	665	0.7	225	2.5	2080	*	
17,	3.3	3830	2.7	2450	4.6	8120	3.1	3320	3.0	3080	3.5	4380	1.6	825	1.3	590	1.4	665	0.7	225	2.5	2080	*	
18,	3.3	3830	2.7	2450	4.3	6980	3.4	4100	2.9	2860	3.9	5600	1.5	740	1.2	520	1.4	665	0.7	225	2.3	1730	*	
19,	3.4	4100	2.6	2260	4.0	5930	5.3	11130	2.7	2450	3.9	5600	1.7	920	1.3	590	1.3	590	0.7	225	2.3	1730	*	
20,	3.5	4380	2.6	2260	4.0	5930	5.6	12540	2.6	2260	3.8	5280	2.0	1280	1.3	590	1.2	520	1.1	450	2.2	1570	*	
21.	4.1	6270	3.1	3320	5.6	12540	5.1	10220	2.9	2860	3.6	4670	2.0	1280	1.4	665	1.2	520	1.1	450	2.1	1420	*	
22,	9.4	38090	3.3	3830	6.0	14590	4.9	9350	2.9	2860	3.3	3830	1.5	740	1.4	665	1.2	520	1.1	450	2.1	1420	*	
23,	10.9	50080	5.0	9780	5.7	13030	4.7	8520	2.9	2860	3.1	3320	1.5	740	1.3	590	1.1	450	1.2	520	2.0	1280	*	
24,	7.5	23900	4.7	8520	5.5	12060	4.6	8120	2.8	2650	2.8	2650	1.5	740	1.3	590	1.1	450	1.1	450	2.0	1280	*	
25,	6.1	15130	4.5	7730	6.3	16240	4.5	7730	3.2	3570	2.6	2260	1.4	665	1.2	520	1.0	390	1.1	450	2.0	1280	*	
26,	6.1	15130	4.5	7730	7.0	20500	7.2	21830	4.1	6270	2.4	1900	1.4	665	1.1	450	1.2	520	1.3	590	2.0	1280	*	
27,	4.7	8520	4.1	6270	6.5	17390	9.3	37310	5.1	10220	2.4	1900	1.3	590	1.1	450	1.2	520	1.2	520	2.2	1570	*	
28,	4.1	6270	4.5	7730	6.3	16240	7.1	21160	4.5	7730	2.5	2080	1.3	590	1.1	450	1.6	825	1.2	520	2.1	1420	*	
29,	4.1	6270	------	------	6.0	14590	6.1	15130	4.3	6980	2.7	2450	1.2	520	1.0	390	1.5	740	1.2	520	2.1	1420	*	
30,	3.9	5600	------	------	5.2	10670	5.8	13540	3.8	5280	2.6	2260	1.4	665	1.0	390	1.5	740	1.1	450	2.2	1570	*	
31,	3.4	4100	------	------	4.8	8930	------	------	3.6	4670	------	------	1.3	590	1.0	390	------	------	1.1	450	------	------	*	

*Frozen—Average discharge assumed 1200 sec. ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DELAWARE RIVER, AT PORT JERVIS, N. Y.

1911.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.0	5930	3.7	4970	3.2	3570	6.6	17990	4.2	6620	2.2	1570	2.6	2260	1.4	665	3.3	3830	2.5	2080	3.6	4670	4.5	7730
2,	3.5	4380	2.7	2450	3.2	3570	5.0	9780	4.2	6620	2.2	1570	2.4	1900	1.4	665	3.2	3570	3.1	3320	4.1	6270	3.8	5280
3,	5.7	13030	2.5	2080	2.7	2450	4.6	8120	4.1	6270	2.4	1900	2.3	1730	1.4	665	2.4	1900	4.3	6980	3.8	5280	3.7	4970
4,	8.0	27500	2.4	1900	2.7	2450	4.4	7350	3.9	5600	2.3	1730	2.1	1420	1.4	665	2.4	1900	3.7	4970	3.5	4380	3.5	4380
5,	6.0	14590	3.1	3320	2.6	2260	4.5	7730	3.8	5280	2.2	1570	2.1	1420	1.3	590	2.1	1420	3.4	4100	3.5	4380	3.5	4380
6,	5.4	11590	3.5	4380	2.5	2080	5.5	12060	3.6	4670	2.4	1900	2.0	1280	1.4	665	2.1	1420	3.3	3830	3.3	3830	3.4	4100
7,	4.8	8930	3.0	3080	2.2	1570	8.2	28980	3.4	4100	2.8	2650	2.0	1280	1.5	740	2.3	1730	3.3	3830	3.6	4670	3.4	4100
8,	4.4	7350	2.8	2650	2.2	1570	8.5	31220	3.1	3320	3.0	3080	2.0	1280	1.5	740	3.2	3570	4.2	6620	3.8	5280	3.3	3830
9,	4.1	6270	2.8	2650	2.0	1280	7.2	21830	3.0	3080	3.0	3080	2.2	1570	1.5	740	3.0	3080	4.1	6270	3.7	4970	3.3	3830
10,	3.8	5280	3.0	3080	2.2	1570	6.5	17390	2.8	2650	2.8	2650	2.0	1280	1.7	920	2.9	2860	3.7	4970	3.5	4380	3.2	3570
11,	3.4	4100	3.0	3080	2.7	2450	6.2	15680	2.7	2450	2.9	2860	1.9	1150	1.6	825	3.6	4670	3.5	4380	3.4	4100	3.2	3570
12,	3.3	3830	2.8	2650	2.7	2450	5.9	14060	2.6	2260	4.4	7350	1.8	1030	1.4	665	3.4	4100	3.4	4100	3.2	3570	3.3	3830
13,	3.7	4970	2.6	2260	3.2	3570	5.5	12060	2.6	2260	8.1	28240	1.8	1030	1.3	590	3.1	3320	3.4	4100	3.2	3570	3.3	3830
14,	3.7	4970	2.5	2080	3.7	4970	5.3	11130	2.5	2080	8.4	30470	1.7	920	1.3	590	3.0	3080	3.2	3570	4.2	6620	3.3	3830
15,	5.4	11590	2.3	1730	4.3	6980	6.8	19220	2.4	1900	7.1	21160	1.6	825	1.1	450	2.7	2450	3.0	3080	3.9	5600	3.3	3830
16,	5.4	11590	2.3	1730	4.3	6980	6.9	19850	2.8	2650	5.9	14060	1.5	740	1.2	520	2.5	2080	2.9	2860	3.7	4970	3.8	5280
17,	5.2	10670	2.3	1730	4.2	6620	6.3	16240	2.8	2650	5.5	12060	1.5	740	1.2	520	2.5	2080	3.1	3320	3.7	4970	4.8	8930
18,	3.8	5280	2.7	2450	3.9	5600	5.6	12540	2.6	2260	5.2	10670	1.6	825	1.3	590	2.4	1900	3.1	3320	3.7	4970	4.8	8930
19,	3.5	4380	2.7	2450	3.7	4970	5.4	11590	2.9	2860	4.6	8120	1.7	920	1.3	590	2.1	1420	6.0	14590	5.2	10670	4.4	7350
20,	3.5	4380	2.6	2260	3.7	4970	5.3	11130	2.9	2860	4.1	6270	1.5	740	1.2	520	2.2	1570	5.8	13540	5.2	10670	4.1	6270
21,	3.5	4380	2.8	2650	3.5	4380	6.5	17390	2.8	2650	3.7	4970	1.7	920	1.3	590	2.1	1420	*5.7	13030	4.7	8520	3.9	5600
22,	3.4	4100	2.8	2650	3.9	5600	5.8	13540	2.7	2450	3.4	4100	1.9	1150	1.3	590	1.9	1150	5.6	12540	4.5	7730	3.8	5280
23,	3.4	4100	2.6	2260	4.4	7350	6.2	15680	2.7	2450	3.4	4100	1.9	1150	1.2	520	2.0	1280	5.6	12540	4.2	6620	4.3	6980
24,	3.2	3570	2.5	2080	4.2	6620	5.7	13030	2.6	2260	3.2	3570	2.0	1280	1.1	450	2.0	1280	6.4	16810	4.0	5930	6.3	16240
25,	3.0	3080	2.5	2080	4.2	6620	5.2	10670	2.7	2450	3.1	3320	1.9	1150	1.1	450	1.8	1030	5.8	13540	4.2	6620	5.9	14060
26,	2.6	2260	2.4	1900	4.2	6620	4.5	7730	2.5	2080	3.4	4100	1.7	920	1.6	825	1.8	1030	5.2	10670	4.1	6270	5.0	9780
27,	2.9	2860	2.5	2080	5.0	9780	4.5	7730	2.5	2080	2.8	2650	1.7	920	1.7	920	1.9	1150	4.8	8930	3.8	5280	4.9	9350
28,	3.0	3080	2.5	2080	10.7	48440	4.3	6980	2.4	1900	2.6	2260	1.7	920	1.7	920	1.9	1150	4.5	7730	3.7	4970	5.2	10670
29,	6.5	17390	------	------	8.1	28240	4.2	6620	2.2	1570	3.1	3320	1.6	825	2.2	1570	1.9	1150	4.2	6620	3.7	4970	4.6	8120
30,	5.2	10670	------	------	6.9	19850	4.0	5930	2.0	1280	2.9	2860	1.4	665	3.3	3830	2.4	1900	4.0	5930	4.3	6980	4.1	6270
31,	4.9	9350	------	------	6.8	19220	------	------	2.0	1280	------	------	1.5	740	3.5	4380	------	------	3.6	4670	------	------	4.0	5930

*Interpolated.

ESTIMATED MONTHLY DISCHARGE, DELAWARE RIVER, AT PORT JERVIS, N. Y.

(Drainage area 3250 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1904.					
November,	5930	2450	3313	1.019	1.137
December,	23900	2080	4148	1.276	1.471
a 1905.					
January,	38870	3080	8722	2.684	3.094
February,					
March (19-31),	55820				
April,	27500	3830	9314	2.866	3.198
May,	3570	1730	2624	0.807	0.930
June,	3830	1280	2087	0.642	0.716
July,	3830	825	1282	0.394	0.454
August,	3320	920	1636	0.503	0.580
September,	13540	2650	5671	1.745	1.946
October,	6980	1420	3303	1.016	1.171
November,	14590	1570	2746	0.845	0.943
December,	45200	2860	8171	2.514	2.898
The year,	55820	825			
b 1906.					
January,	18600	2650	5781	1.779	2.051
February (1-9 and 23-28),	15680				
March,	37310	2450	8906	2.740	3.159
April,	54180	4970	17474	5.377	5.999
May,	12540	2260	4741	1.459	1.682
June,	16240	3080	6681	2.056	2.294
July,	6270	1570	3056	0.940	1.084
August,	4970	1150	2470	0.760	0.876
September,	2260	1030	1437	0.442	0.493
October,	10670	1030	3014	0.927	1.069
November,	18600	2260	5381	1.656	1.848
December,	9780	2450	4650	1.431	1.650
The year,	54180	1030			
1907.					
January,	35000	3830	10107	3.110	3.585
February,	6620	2450	4276	1.316	1.371
March,	34240	5280	13434	4.134	4.766
April,	11590	3830	6234	1.918	2.140
May,	7350	2860	4871	1.499	1.728
June,	5600	1420	3031	.933	1.041
July,	2450	665	1359	.418	.482
August,	2260	590	1526	.470	.542
September,	4970	825	1952	.601	.670
October,	17990	1900	4887	1.504	1.734
November,	48440	4100	10622	3.268	3.646
December,	68120	2650	12578	3.870	4.462
The year,	68120	590	6240	1.920	26.167
1908.					
January,	16810	1900	6134	1.887	2.175
February,	70580	1900	9218	2.836	3.059
March,	48440	3320	16146	4.968	5.728
April,	21830	4100	10466	3.220	3.593
May,	27500	3080	10343	3.182	3.668
June,	4380	825	1809	0.557	0.622
July,	4100	520	1051	0.323	0.372
August,	740	330	505	0.155	0.179
September,	1280	180	306	0.094	0.105
October,	7350	450	1215	0.374	0.431
November,	3320	1280	1681	0.517	0.577
December,	3080	825	1670	0.514	0.593
The year,	70580	180	5045	1.552	21.102

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a Frozen Feb. 6th to Mar. 18th, incl.
b Frozen Feb. 10th-22nd, incl.

ESTIMATED MONTHLY DISCHARGE, DELAWARE RIVER, AT PORT JERVIS, N. Y.

(Drainage area 3250 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1909.					
January,	59100	1900	9445	2.906	3.350
February,	56640	2650	16243	4.998	5.206
March,	23900	3080	9226	2.839	3.273
April,	30470	5600	11427	3.516	3.923
May,	31220	2450	11949	3.677	4.239
June,	8930	1280	3951	1.216	1.357
July,	2080	665	987	0.304	0.351
August,	1570	390	705	0.217	0.250
September,	590	330	394	0.121	0.135
October,	520	275	385	0.118	0.136
November,	740	275	414	0.127	0.142
December,	3830	590	1596	0.491	0.566
The year,	59100	275	5560	1.711	22.928
a 1910.					
January,	50080	1420	8030	2.471	2.849
February,	9780	1420	4016	1.236	1.287
March,	67300	5930	19501	6.000	6.917
April,	37310	3320	8857	2.725	3.040
May,	12540	2260	5425	1.669	1.924
June,	6620	1900	4036	1.242	1.385
July,	1900	520	1000	0.308	0.355
August,	2450	390	709	0.218	0.251
September,	1570	390	752	0.231	0.258
October,	740	225	413	0.127	0.146
November,	3320	450	1523	0.469	0.523
December,	----------	----------	1195	0.368	0.425
The year,	67300	225	4621	1.422	19.360
1911.					
January,	27500	2260	7595	2.337	2.694
February,	4970	1730	2527	0.777	0.809
March,	48440	1280	7569	2.329	2.685
April,	31220	5930	13708	4.218	4.706
May,	6620	1280	3061	0.942	1.086
June,	30470	1570	6607	2.033	2.268
July,	2260	665	1128	0.347	0.400
August,	4380	450	902	0.278	0.321
September,	4670	1030	2150	0.662	0.739
October,	16810	2080	6995	2.152	2.481
November,	10670	3570	5724	1.761	1.965
December,	16240	3570	6455	1.986	2.290
The year,	48440	450	5368	1.652	22.444

a Dec. 7-31 frozen. Average discharge assumed 1200 sec. ft.

BIG BUSHKILL CREEK.

DESCRIPTION OF BASIN.

Big Bushkill creek, a large tributary of the Delaware river in Monroe and Pike counties, drains an area of approximately 150 square miles. Rising in many lakes and ponds on the Pocono Plateau, in the south central part of Pike county, it flows southerly through an uninhabited region covered with heavy second growth and some virgin timber, to within a few miles of its mouth at Bushkill, the length being approximately 25 miles. The principal tributaries are Wells, Middle Bushkill and Little Bushkill creeks, the watershed including numerous lakes, ponds and swamps, and lying entirely within the glacial area. On Bushkill creek and its tributaries are numerous falls, and rapids, most noted of which are Bushkill Falls on Little Bushkill creek, and Winona Falls on the main stream, all the streams being rapid below the falls, flowing over rocky beds within steep, precipitous banks, while above the slopes flatten and swampy areas abound. Bushkill village, at its mouth, is the only town within this basin. This creek and its tributaries are used to some extent on the lower reaches for power purposes by grist mills, while excellent sites for considerable powers are as yet undeveloped.

The average yearly rainfall over this watershed is from 45 to 50 inches. The flow has been measured since September 19, 1908, at Shoemakers, 3 miles above the mouth.

DELAWARE BASIN—STATION NO. 8.

BIG BUSHKILL CREEK AT SHOEMAKER'S.

DESCRIPTION OF STATION.

This station was established on September 19, 1908, by the Water Supply Commission of Pennsylvania, on a single span, steel through-truss, highway bridge near Shoemaker's, 2 miles upstream from the village of Bushkill. A standard chain gage is fastened to the guard rail on the upstream side of the bridge. The length of chain from center of rivet to bottom of weight is 14.42 feet.

Gaging Station on Big Bushkill Creek, at Shoemakers, Monroe County.

Discharge measurements are made from the downstream side of the bridge, and by wading above and below at low stages. The initial point for soundings is left end of handrail on downstream side of bridge. The bench mark is a point on the upstream corner of left abutment, top of fifth course from bottom, or eight course from top, ch is 5.625 feet above arbitrary zero of gage. The channel is ight for about 300 feet above and 800 feet below the bridge, the m being gravelly with some large rocks, and fairly permanent. w creek enters from the left a few hundred feet above the bridge. e gage is read once daily by George Beaver.

Since the establishment of the gage, nine discharge measurements have been made.

SCHARGE MEASUREMENTS, BIG BUSHKILL CREEK, AT SHOEMAKER'S, MONROE COUNTY, PA.

(Drainage area 115 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1908.							
1	Sept. 19,	Grant,	18	16	0.49	0.92	8	Wading measurement 2000' below bridge.
	1909.							
2	Feb. 27,	do	98	244	4.03	3.16	984	Msmt. from bridge.
3	April 28,	do	98	174	2.79	2.53	484	do
4	June 30,	do	84	102	0.91	1.56	93	do
5	July 7,	do	70	87	0.71	1.41	62	do
	1910.							
6	May 16,	Langenheim,	95	115	1.82	1.93	210	do
7	Oct. 3,	do	28	20	0.95	0.98	19	Wading measurement.
8	Nov. 11,	do	95	64	1.01	1.40	65	Msmt. from bridge.
	1911.							
9	Aug. 4,	Langenheim,	62	54	0.86	1.29	47	Msmt. from bridge.

DISCHARGE TABLE FOR BIG BUSHKILL CREEK, AT SHOEMAKER'S, MONROE COUNTY, FROM SEPTEMBER 19, 1908.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
.90	6	.70	128	.60	529	.40	1237	.20	2115
1.00	12	.80	160	.70	596	.50	1346	.30	2225
.10	20	.90	195	.80	672	.60	1455	.40	2335
.20	31	2.00	233	.90	750	.70	1565	.50	2445
.30	44	.10	273	3.00	838	.80	1675	.60	2555
.40	60	.20	317	.10	928	.90	1785	.70	2665
.50	79	.30	364	.20	1025	4.00	1895	.80	2775
.60	102	.40	415	.30	1130	.10	2005	.90	2885
		.50	469					5.00	2995

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF BIG BUSHKILL CREEK, AT SHOEMAKER'S, MONROE COUNTY, PA.

1908.	SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	1.00	12	2.30	364	1.40	60
2	------	------	1.10	20	2.20	317	1.35	52
3,	------	------	1.20	31	2.10	273	1.30	44
4,	------	------	1.10	20	2.00	233	1.30	44
5,	------	------	1.20	31	2.00	233	1.29	43
6,	------	------	1.00	12	1.90	195	1.25	38
7,	------	------	0.98	11	1.85	178	1.25	38
8,	------	------	0.98	11	1.80	160	1.90	195
9,	------	------	0.95	9	1.80	160	1.90	195
10,	------	------	1.05	16	1.75	144	1.90	195
11,	------	------	1.05	16	1.70	128	1.87	184
12,	------	------	1.05	16	1.70	128	1.85	178
13,	------	------	1.05	16	1.65	115	1.80	160
14,	------	------	1.05	16	1.60	102	1.70	128
15,	------	------	1.05	16	1.60	102	1.65	115
16,	------	------	1.05	16	1.50	79	1.65	115
17,	------	------	1.05	16	1.50	79	1.60	102
18,	------	------	1.05	16	1.30	44	1.55	90
19,	0.92	7	1.05	16	1.20	31	1.70	128
20,	0.93	8	1.05	16	1.20	31	1.70	128
21,	0.93	8	1.05	16	1.20	31	1.60	102
22,	0.92	7	1.05	16	1.20	31	1.60	102
23,	0.92	7	1.05	16	1.30	44	1.50	79
24,	0.92	7	1.05	16	1.40	60	1.50	79
25,	0.92	7	1.05	16	1.45	70	1.70	128
26,	0.90	6	2.75	634	1.50	79	1.70	128
27,	0.90	6	2.70	596	1.50	79	1.60	102
28,	0.90	6	2.40	415	1.50	79	1.50	79
29,	1.40	60	2.40	415	1.50	79	1.50	79
30,	1.20	31	2.30	364	1.40	60	1.50	79
31,	------	------	2.30	364	------	------	1.75	144

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF BIG BUSHKILL CREEK, AT SHOEMAKER'S, MONROE COUNTY, PA.

1909.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.70	128	2.10	273	2.80	672	2.45	442	3.25	1078	1.85	178	1.55	90	1.23	35	1.02	14	1.05	16	1.07	18	1.27	40
2,	1.60	102	2.15	295	2.75	634	2.35	390	3.80	1675	1.78	154	1.53	86	1.22	34	.99	11	1.05	16	1.07	18	1.26	39
3,	1.60	102	2.10	273	2.80	672	2.35	390	3.50	1346	1.78	154	1.52	84	1.20	31	.98	11	1.04	15	1.07	18	1.23	35
4,	1.70	128	2.15	295	2.60	529	2.35	390	3.40	1237	1.75	144	1.50	79	1.20	31	.98	11	1.03	14	1.06	17	1.20	31
5,	1.90	195	2.30	364	2.45	442	2.20	317	3.25	1078	1.90	195	1.48	75	1.18	29	.98	11	1.03	14	1.06	17	1.20	31
6,	2.80	672	2.25	340	2.35	390	2.20	317	3.05	883	2.13	286	1.45	70	1.18	29	.97	10	1.00	12	1.06	17	1.18	29
7,	3.30	1130	2.15	295	2.20	317	2.15	295	2.90	750	2.05	253	1.43	66	1.16	27	.97	10	.99	11	1.05	16	1.18	29
8,	2.80	672	2.10	273	2.30	364	2.10	273	3.00	838	1.93	206	1.40	60	1.15	25	.97	10	1.00	12	1.05	16	1.28	41
9,	2.70	596	2.10	273	2.40	415	2.05	253	2.80	672	1.85	178	1.40	60	1.15	25	.96	10	1.00	12	1.05	16	1.20	31
10,	2.50	469	2.40	415	2.30	364	2.00	233	2.75	634	1.95	214	1.38	57	1.15	25	1.00	12	.99	11	1.06	17	1.18	29
11,	2.35	390	2.70	596	2.50	469	2.00	233	2.80	672	1.98	225	1.38	57	1.13	23	1.42	64	1.14	24	1.06	17	1.18	29
12,	2.20	317	2.50	469	2.50	469	1.95	214	2.70	596	1.93	206	1.33	49	1.13	23	1.35	52	1.13	23	1.05	16	1.15	25
13,	2.10	273	2.40	415	2.40	415	1.95	214	2.55	499	1.85	178	1.33	49	1.13	23	1.20	31	1.13	23	1.05	16	1.15	25
14,	2.00	233	2.40	415	2.35	390	2.45	442	2.45	442	1.82	167	1.33	49	1.13	23	1.04	15	1.13	23	1.05	16	2.80	672
15,	2.10	273	2.60	529	2.40	415	3.10	928	2.45	442	1.82	167	1.32	47	1.13	23	1.00	12	1.11	21	1.05	16	2.20	317
16,	2.20	317	3.10	928	2.25	340	2.95	794	2.45	442	1.80	160	1.32	47	1.20	31	1.00	12	1.09	19	1.05	16	2.00	233
17,	2.25	340	3.80	1675	2.20	317	2.85	711	2.50	469	1.75	144	1.30	44	1.34	50	1.13	23	1.08	18	1.06	17	1.88	188
18,	2.20	317	3.60	1455	2.25	340	2.65	562	2.40	415	2.30	364	1.28	41	1.32	47	1.10	20	1.08	18	1.05	16	1.85	178
19,	2.10	273	3.50	1346	2.05	253	2.55	499	2.30	364	2.20	317	1.30	44	1.23	35	1.05	16	1.08	18	1.06	17	1.85	178
20,	2.10	273	4.90	2885	2.10	273	2.50	469	2.25	340	2.08	265	1.28	41	1.18	29	1.02	14	1.08	18	1.06	17	1.80	160
21,	2.10	273	4.30	2225	2.15	295	2.65	562	2.15	295	1.95	214	1.25	38	1.15	25	1.00	12	1.08	18	1.07	18	1.80	160
22,	2.10	273	3.80	1675	2.00	233	2.85	711	2.15	295	1.88	188	1.25	38	1.12	22	1.00	12	1.08	18	1.07	18	1.78	154
23,	2.10	273	3.40	1237	1.95	214	2.75	634	2.18	308	1.78	154	1.54	88	1.12	22	1.02	14	1.07	18	1.08	18	1.78	154
24,	2.00	233	4.00	1895	2.05	253	2.95	794	2.10	273	1.75	144	1.60	102	1.11	21	1.17	28	1.16	27	1.09	19	1.75	144
25,	2.00	233	4.00	1895	2.20	317	2.70	596	2.03	245	1.75	144	1.45	70	1.09	19	1.15	25	1.14	24	1.09	19	1.75	144
26,	2.00	233	3.50	1346	3.10	928	2.70	596	1.98	225	1.70	128	1.42	64	1.09	19	1.11	21	1.12	22	1.11	21	1.70	128
27,	2.10	273	3.20	1025	3.00	838	2.65	562	2.05	253	1.68	123	1.35	52	1.08	18	1.08	18	1.10	20	1.15	25	1.70	128
28,	2.10	273	3.05	883	2.80	672	2.53	487	2.03	245	1.68	123	1.30	44	1.08	18	1.10	20	1.08	18	1.19	30	1.68	123
29,	2.10	273	------	------	2.70	596	2.52	481	2.03	245	1.65	115	1.28	41	1.08	18	1.08	18	1.08	18	1.23	35	1.65	115
30,	2.10	273	------	------	2.60	529	2.85	711	2.00	233	1.60	102	1.28	41	1.07	18	1.08	18	1.08	18	1.25	38	1.63	110
31,	2.00	233	------	------	2.50	469	------	------	1.92	203	------	------	1.25	38	1.05	16	------	------	1.07	18	------	------	1.60	102

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF BIG BUSHKILL CREEK, AT SHOEMAKER'S, MONROE COUNTY, PA.

1910.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.58	97	2.33	379	3.45	1292	2.23	331	2.78	657	1.95	214	1.56	93	1.10	20	1.18	29	.98	11	1.03	14	1.37	55
2,	1.58	97	2.30	364	3.48	1324	2.18	308	2.63	549	1.95	214	1.55	90	1.10	20	1.20	31	.98	11	1.03	14	1.37	55
3,	1.56	93	2.28	355	3.50	1346	2.05	253	2.58	517	1.93	206	1.50	79	1.12	22	1.20	31	.98	11	1.10	20	1.37	55
4,	1.56	93	2.28	355	3.45	1292	2.05	253	2.50	469	1.93	206	1.50	79	1.18	29	1.55	90	.98	11	1.43	66	1.37	55
5,	1.56	93	2.26	345	3.35	1183	1.98	225	2.40	415	1.85	178	1.43	66	1.20	31	1.46	71	.98	11	1.50	79	1.37	55
6,	1.56	93	2.26	345	3.28	1109	1.96	218	2.35	390	2.10	273	1.40	60	1.18	29	1.38	57	.98	11	1.50	79	1.49	77
7,	1.60	102	2.28	355	3.65	1510	2.22	326	2.28	355	2.03	245	1.40	60	1.13	23	1.25	38	1.05	16	1.50	79	1.49	77
8,	1.60	102	2.28	355	3.72	1587	2.23	331	2.25	340	1.95	214	1.58	97	1.10	20	1.23	35	1.02	14	1.49	77	1.49	77
9,	1.60	102	2.40	415	3.58	1433	2.18	308	2.33	379	1.88	188	1.45	70	1.18	29	1.20	31	1.02	14	1.45	70	1.49	77
10,	1.58	97	2.38	405	3.26	1088	2.03	245	2.30	364	2.12	282	1.40	60	1.18	29	1.18	29	1.02	14	1.42	64	1.49	77
11,	1.58	97	2.38	405	3.08	910	1.98	225	2.28	355	2.15	295	1.38	57	1.53	86	1.12	22	1.00	12	1.38	57	1.44	68
12,	1.56	93	2.35	390	3.03	865	1.98	225	2.18	308	2.23	331	1.35	52	1.43	66	1.12	22	1.00	12	1.38	57	1.44	68
13,	1.55	90	2.34	384	2.90	750	1.95	214	2.13	286	2.28	355	1.33	49	1.40	60	1.10	20	1.00	12	1.38	57	1.44	68
14,	1.55	90	2.33	379	3.05	883	1.92	203	2.03	245	2.18	308	1.30	44	1.38	57	1.10	20	1.00	12	1.38	57	1.44	68
15,	1.53	86	2.30	364	2.88	734	1.88	188	1.98	225	2.05	253	1.30	44	1.35	52	1.08	18	1.00	12	1.38	57	1.44	68
16,	1.52	84	2.15	295	2.76	642	1.88	188	1.95	214	1.98	225	1.28	41	1.30	44	1.05	16	1.00	12	1.38	57	1.44	68
17,	1.52	84	2.10	273	2.70	596	1.90	195	1.93	206	1.98	225	1.43	66	1.26	39	1.05	16	1.00	12	1.35	52	1.44	68
18,	1.56	93	2.05	253	2.68	583	2.85	711	1.90	195	2.05	253	1.38	57	1.23	35	1.05	16	1.00	12	1.32	47	1.44	68
19,	1.56	93	2.30	364	2.62	542	3.38	1216	1.88	188	2.10	273	1.30	44	1.23	35	1.05	16	1.00	12	1.32	47	1.55	90
20,	1.58	97	2.35	390	2.60	529	3.20	1025	1.86	181	1.96	218	1.26	39	1.20	31	1.05	16	1.05	16	1.30	44	1.55	90
21,	3.30	1130	2.55	499	2.78	657	3.08	910	1.95	214	1.90	195	1.25	38	1.48	75	1.05	16	1.05	16	1.30	44	1.55	90
22,	3.20	1025	2.95	794	2.85	711	2.90	750	1.95	214	1.85	178	1.23	35	1.40	60	1.03	14	1.08	18	1.35	52	1.57	95
23,	3.05	883	2.92	768	2.85	711	2.76	642	1.93	206	1.78	154	1.20	31	1.15	25	1.03	14	1.10	20	1.33	49	1.57	95
24,	2.90	750	2.90	750	2.78	657	2.68	583	1.90	195	1.70	128	1.20	31	1.12	22	1.03	14	1.09	19	1.32	47	1.96	218
25,	2.88	734	2.82	688	2.73	619	2.98	820	2.10	273	1.66	118	1.18	29	1.12	22	1.08	18	1.06	17	1.38	57	1.99	229
26,	2.85	711	2.70	596	2.70	596	3.45	1292	2.30	364	1.65	115	1.18	29	1.10	20	1.05	16	1.05	16	1.35	52	1.99	229
27,	2.60	529	2.68	583	2.63	549	3.45	1292	2.23	331	1.58	97	1.15	25	1.10	20	1.05	16	1.03	14	1.35	52	1.99	229
28,	2.60	529	2.75	634	2.50	469	3.30	1130	2.18	308	1.60	102	1.15	25	1.10	20	1.03	14	1.03	14	1.33	49	1.97	222
29,	2.45	442	------	------	2.42	426	3.08	910	2.08	265	1.63	110	1.12	22	1.10	20	.98	11	1.03	14	1.38	57	2.09	269
30,	2.40	415	------	------	2.33	379	2.95	794	2.03	245	1.58	97	1.12	22	1.05	16	.98	11	1.03	14	1.38	57	2.19	313
31,	2.35	290	------	------	2.28	355	------	------	1.98	225	------	------	1.12	22	1.05	16	------	------	1.03	14	------	-----	2.19	313

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF BIG BUSHKILL CREEK, AT SHOEMAKER'S, MONROE COUNTY, PA.

1911.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.18	308	2.13	286	2.16	299	2.52	481	2.15	295	1.89	192	1.82	167	1.29	43	2.83	695	2.04	249	2.27	350	2.10	273
2,	2.28	355	2.13	286	2.23	331	2.50	469	2.12	282	1.85	178	1.67	120	1.25	38	2.78	657	2.14	291	2.24	336	2.07	261
3,	2.53	487	2.13	286	2.21	322	2.45	442	2.09	269	1.82	167	1.61	105	1.22	34	2.23	331	2.06	257	2.12	282	2.02	241
4,	3.18	1006	2.13	286	2.13	286	2.41	420	2.02	241	1.73	138	1.52	84	1.30	44	2.01	237	1.99	229	2.07	261	1.97	222
5,	3.18	1006	2.26	345	2.08	265	2.67	576	1.97	222	1.77	150	1.47	73	1.27	40	1.83	170	1.93	206	2.00	233	1.99	229
6,	3.18	1006	2.15	295	2.01	237	2.73	619	1.95	214	1.80	160	1.47	73	1.24	36	1.98	225	1.88	188	1.97	222	1.90	195
7,	3.18	1006	2.26	345	2.08	265	2.77	649	1.95	214	1.83	170	1.42	64	1.22	34	2.01	237	2.06	257	2.29	359	1.87	184
8,	3.16	986	2.21	322	2.08	265	2.72	611	1.92	203	1.81	164	1.35	52	1.20	31	1.93	206	2.11	277	2.21	322	1.87	184
9,	3.16	986	2.13	286	2.08	265	2.72	611	1.90	195	1.72	134	1.27	40	1.17	28	1.90	195	2.08	265	2.09	269	1.87	184
10,	2.93	776	2.08	265	2.18	308	2.59	523	1.87	184	1.67	120	1.27	40	1.12	22	1.88	188	2.04	249	2.06	257	1.85	178
11,	2.86	719	1.98	225	2.28	355	2.54	493	1.87	184	1.65	115	1.23	35	1.12	22	1.88	188	1.93	206	2.04	249	1.79	157
12,	2.68	583	1.96	218	2.28	355	2.47	453	1.82	167	2.57	511	1.19	30	1.15	26	2.08	265	2.06	257	1.99	229	1.77	150
13,	2.68	583	2.08	265	2.23	331	2.42	426	1.82	167	3.17	996	1.57	95	1.15	26	2.01	237	2.01	237	2.14	291	1.75	144
14,	2.63	549	2.06	257	2.16	299	2.40	415	1.82	167	3.62	1477	1.47	73	1.12	22	1.90	195	1.86	181	2.09	269	1.74	141
15,	2.78	657	2.06	257	2.13	286	2.37	400	1.77	150	3.57	1422	1.47	73	1.10	20	1.88	170	1.83	170	2.12	282	1.97	222
16,	2.63	549	2.11	277	2.08	265	2.57	511	1.75	144	3.32	1151	1.47	73	1.05	16	1.81	164	1.81	164	2.02	241	2.17	304
17,	2.58	517	2.13	286	1.98	225	2.47	453	1.75	144	3.10	928	1.40	60	1.05	16	1.78	154	1.78	154	1.99	229	2.37	400
18,	2.58	517	2.13	286	1.98	225	2.42	426	1.75	144	2.77	649	1.32	47	1.00	12	1.73	138	2.02	241	2.34	384	2.40	415
19,	2.58	517	2.11	277	1.98	225	2.35	390	1.73	138	2.72	611	1.27	40	1.10	20	1.67	120	2.91	759	2.44	437	2.27	350
20,	2.53	487	2.08	265	1.98	225	2.67	576	1.72	134	2.67	576	1.27	40	1.10	20	1.64	112	2.82	688	2.37	400	2.14	291
21,	2.46	447	2.13	286	1.93	206	2.67	576	1.80	160	2.57	511	1.52	84	1.05	16	1.58	97	2.76	642	2.29	359	2.10	273
22,	2.38	405	2.28	355	1.93	206	2.72	611	1.87	184	2.52	481	1.47	73	1.00	12	1.58	97	2.86	719	2.22	326	2.07	261
23,	2.34	384	2.18	308	1.98	225	2.65	562	1.82	167	2.40	415	1.37	55	1.00	12	1.58	97	3.11	938	2.17	304	2.22	326
24,	2.28	355	2.13	286	1.96	218	2.62	542	1.79	157	2.27	350	1.37	55	0.94	8	1.56	93	3.08	910	2.22	326	2.28	355
25,	2.23	331	2.11	277	1.92	203	2.50	469	1.73	137	2.19	313	1.82	167	1.10	20	1.53	86	2.91	759	2.19	313	2.37	400
26,	2.23	331	2.18	308	1.88	188	2.43	431	1.70	128	2.15	295	1.72	134	1.25	38	1.51	81	2.79	664	2.16	299	2.27	350
27,	2.23	331	2.10	273	2.18	308	2.27	350	1.67	120	2.12	282	1.57	95	1.26	39	1.51	81	2.71	604	2.11	277	2.42	426
28,	2.28	355	1.98	225	2.68	583	2.25	340	1.64	112	2.02	241	1.49	77	1.28	41	1.50	79	2.59	523	2.09	269	2.50	469
29,	2.33	379	------	------	2.68	583	2.22	326	1.57	95	1.95	214	1.45	70	1.95	214	1.56	93	2.48	458	2.24	336	2.42	426
30,	2.28	355	------	------	2.63	549	2.17	304	1.55	90	1.92	203	1.42	64	2.55	499	1.98	225	2.42	426	2.16	299	2.42	426
31,	2.24	336	------	------	2.60	529	------	------	1.52	84	------	------	1.23	49	2.70	596	------	------	2.36	395	------	------	2.32	374

ESTIMATED MONTHLY DISCHARGE, BIG BUSHKILL CREEK, AT SHOEMAKER'S, MONROE COUNTY, PA.

(Drainage area 115 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1908.					
September,	60	6	------	------	------
October,	634	9	103	0.896	1.033
November,	364	31	124	1.078	1.203
December,	195	38	108	0.939	1.083
1909.					
January,	1130	102	324	2.817	3.248
February,	2885	273	928	8.070	8.403
March,	928	214	446	3.878	4.471
April,	928	214	483	4.200	4.686
May,	1675	203	571	4.965	5.724
June,	364	102	186	1.617	1.804
July,	102	38	58	0.504	0.581
August,	50	16	26	0.226	0.261
September,	64	10	18	0.157	0.175
October,	27	11	18	0.157	0.181
November,	38	16	19	0.165	0.185
December,	672	25	123	1.070	1.234
The year,	2885	10	267	2.319	30.953
1910.					
January,	1130	84	304	2.643	3.047
February,	794	253	446	3.878	4.038
March,	1587	355	849	7.383	8.515
April,	1292	188	544	4.730	5.277
May,	657	181	312	2.713	3.128
June,	355	97	208	1.809	2.018
July,	97	22	50	0.435	0.502
August,	86	16	35	0.304	0.350
September,	90	11	26	0.226	0.252
October,	20	11	14	0.122	0.140
November,	79	14	54	0.470	0.524
December,	313	55	119	1.035	1.193
The year,	1587	11	247	2.146	28.984
1911.					
January,	1006	308	568	4.939	5.694
February,	355	218	283	2.461	2.563
March,	583	188	304	2.643	3.047
April,	649	304	482	4.191	4.676
May,	295	84	171	1.487	1.714
June,	1477	115	444	3.861	4.308
July,	167	30	74	0.643	0.741
August,	596	8	66	0.574	0.662
September,	695	79	197	1.713	1.911
October,	938	154	405	3.522	4.060
November,	437	222	300	2.609	2.911
December,	469	141	284	2.470	2.848
The year,,	1477	8	298	2.593	35.135

ANALOMINK CREEK.

DESCRIPTION OF BASIN.

Analomink, sometimes called Holler creek, and also known as West Branch of Brodheads creek, is a tributary of Brodheads creek in the central part of Monroe county, lying almost entirely within Paradise township, and draining an area of approximately 45 square miles. This stream rises in three branches; Paradise, Holler and Swiftwater creeks, in the Pocono mountains, following from their junction a general southeasterly direction for approximately 10 miles, to its mouth in Brodheads creek, one mile above Analomink. The watershed is sparsely inhabited, being covered with second growth timber except for small agricultural areas. The slope is generally steep, except at the junction of the three branches where the valley widens for a short distance, from which point it continues with a steep slope to its mouth. It lies entirely within the glacial area. One or two small water power plants are operated during the summer, and two water works systems obtain supplies from springs at the headwaters. The average yearly rainfall over this watershed is from 45 to 50 inches.

The flow has been measured since September 16th, 1908, at Henryville, 2½ miles above the mouth.

DELAWARE BASIN—STATION NO. 9.

ANALOMINK CREEK AT HENRYVILLE.

DESCRIPTION OF STATION.

This station was established on September 16th, 1908, by the Water Supply Commission of Pennsylvania. A 10-foot staff gage is fastened to a large tree which extends out into a pool on the west bank of the stream, about 150 feet upstream from a single span, iron, highway bridge, about one mile upstream from the D. L. & W. Railroad Station, at Henryville.

Discharge measurements are made by wading either above or under the bridge at normal and low water stages, and from the bridge on the downstream side at high water. The initial point for soundings is the right end of top channel of downstream handrail. The Bench Mark is a spike in pine stump just downstream from gage on right bank, and 43 paces upstream from end of laundry building, the elevation being 7.045 feet above the arbitrary zero of gage. The creek channel both above and below for 200 feet each way is straight, the bed of the creek being of gravel and fairly permanent. Neither bank overflows at high stages. The gage has been read twice daily by Mrs. A. L. Henry since its installation.

Since the establishment of the gage, 9 discharge measurements have been made.

DISCHARGE MEASUREMENTS, ANALOMINK CREEK, AT HENRYVILLE, MONROE COUNTY, PA.

(Drainage area 35 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
1	1908. Sept. 16,	Grant,	25	26	0.35	0.32	9.2	Wading msm't. 150′ above bridge.
2	1909. Feb. 26,	do	58	76	3.39	1.43	257	Msmt. from bridge.
3	April 30,	do	58	76	3.24	1.43	246	do
4	July 1,	do	37	37	0.99	0.65	36.4	Wading msm't. 150′ above bridge.
5	July 8,	do	28	27	0.91	0.56	25	do
6	1910. May 15,	Langenheim,	57	41	1.96	0.85	81	Msm't. from bridge.
7	Sept. 2,	Reckord,	46	70	0.35	0.50	24	Wading msm't. 150′ above bridge.
8	Nov. 11,	Langenheim,	24	15	0.98	0.47	15	Wading msm't. 20 ft. below bridge.
9	1911. Aug. 11,	Cornell,	25	29	0.90	0.50	26	Wading msm't. 100 ft. below gage.

DISCHARGE TABLE FOR ANALOMINK CREEK, AT HENRYVILLE, MONROE COUNTY, FROM SEPTEMBER 16, 1908.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.30	8	.90	92	.50	280	.10	519	.70	789
.40	12	1.00	119	.60	318	.20	561	.80	835
.50	20	.10	147	.70	356	.30	605	.90	882
.60	32	.20	178	.80	395	.40	650	3.00	929
.70	48	.30	209	.90	436	.50	696	.10	976
.80	68	.40	243	2.00	477	.60	742	.20	1023
								.30	1070

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ANALOMINK CREEK, AT HENRYVILLE, MONROE COUNTY, PA.

1908.	SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	0.41	13	0.72	52	0.61	34
2,	------	------	0.45	16	0.66	42	0.60	32
3,	------	------	0.42	14	0.64	38	0.60	32
4,	------	------	0.41	13	0.64	38	0.60	32
5,	------	------	0.38	11	0.62	35	0.60	32
6,	------	------	0.35	10	0.60	32	0.60	32
7,	------	------	0.35	10	0.59	31	0.77	62
8,	------	------	0.35	10	0.58	30	0.81	70
9,	------	------	0.35	10	0.57	28	0.77	62
10,	------	------	0.36	10	0.56	27	0.68	45
11,	------	------	0.52	22	0.55	26	0.68	45
12,	------	------	0.45	16	0.54	25	0.65	40
13,	------	------	0.44	15	0.53	24	0.65	40
14,	------	------	0.43	14	0.52	22	0.67	43
15,	------	------	0.42	14	0.58	30	0.65	40
16,	0.32	9	0.42	14	0.66	42	0.65	40
17,	0.32	9	0.40	12	0.62	35	0.65	40
18,	0.32	9	0.39	11	0.64	38	0.69	46
19,	0.32	9	0.38	11	0.66	42	0.66	42
20,	0.32	9	0.38	11	0.67	43	0.65	40
21,	0.32	9	0.38	11	0.65	40	0.65	40
22,	0.32	9	0.38	11	0.64	38	0.65	40
23,	0.32	9	0.38	11	0.64	38	0.65	40
24,	0.32	9	0.42	14	0.62	35	0.65	40
25,	0.32	9	0.55	26	0.62	35	0.65	40
26,	0.32	9	1.32	216	0.62	35	0.65	40
27,	0.32	9	1.55	299	0.62	35	0.65	40
28,	0.41	13	1.28	203	0.62	35	0.65	40
29,	0.80	68	1.05	133	0.61	34	0.65	40
30,	0.47	18	0.82	73	0.61	34	0.65	40
31,	------	------	0.78	64	------	------	0.65	40

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ANALOMINK CREEK, AT HENRYVILLE, MONROE COUNTY, PA.

1909.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	0.65	40	0.88	87	1.25	194	1.09	144	1.80	395	0.80	68	0.68	45	0.58	30	0.49	19	0.50	20	0.50	20	0.45	16
2.	1.00	119	1.28	203	1.10	147	1.02	125	1.68	348	0.80	68	0.67	43	0.56	27	0.49	19	0.50	20	0.50	20	0.45	16
3,	0.65	40	1.31	212	1.10	147	0.98	114	1.50	280	0.80	68	0.67	43	0.55	26	0.49	19	0.50	20	0.50	20	0.45	16
4,	0.68	45	1.08	141	1.05	133	0.97	111	1.48	273	0.80	68	0.67	43	0.54	25	0.49	19	0.49	19	0.55	26	0.45	16
5,	0.94	103	0.90	92	1.05	133	0.95	106	1.42	250	1.16	166	0.67	43	0.53	24	0.49	19	0.49	19	0.55	26	0.45	16
6,	1.10	147	1.02	125	1.05	133	0.92	97	1.32	216	1.18	172	0.67	43	0.52	22	0.48	18	0.48	18	0.52	22	0.45	16
7,	1.20	178	0.88	87	1.04	130	0.89	90	1.22	184	0.90	92	0.67	43	0.51	21	0.47	18	0.48	18	0.52	22	0.61	34
8,	1.10	147	0.88	87	1.02	124	0.89	90	1.17	169	0.85	80	0.66	42	0.52	22	0.46	17	0.47	18	0.51	21	0.71	50
9,	1.08	141	0.86	82	1.00	119	0.89	90	1.16	166	0.85	80	0.65	40	0.52	22	0.45	16	0.46	17	0.50	20	0.65	40
10,	1.00	119	1.80	395	1.10	147	0.89	90	1.12	153	0.92	97	0.65	40	0.52	22	0.85	80	0.45	16	0.49	19	0.80	68
11.	0.95	106	1.14	159	1.02	124	0.89	90	1.15	162	0.80	68	0.64	38	0.52	22	0.78	64	0.44	15	0.48	18	0.70	48
12,	0.92	97	1.00	119	0.98	114	0.89	90	1.02	125	0.80	68	0.64	38	0.52	22	0.68	45	0.79	66	0.47	18	0.52	22
13,	0.92	97	1.00	119	0.95	106	0.89	90	0.97	111	0.80	68	0.64	38	0.52	22	0.50	20	0.52	22	0.46	17	0.58	30
14,	0.92	97	1.00	119	0.93	100	1.78	387	0.94	103	0.79	66	0.64	38	0.52	22	0.50	20	0.50	20	0.45	16	1.54	295
15,	0.89	90	1.02	125	0.92	97	1.52	287	0.92	97	0.79	66	0.80	68	0.60	32	0.58	30	0.50	20	0.45	16	1.10	147
16,	0.89	90	2.00	477	0.90	92	1.18	172	0.92	97	0.79	66	0.76	60	0.70	48	0.80	68	0.50	20	0.45	16	0.95	106
17,	1.00	119	1.80	395	0.90	92	1.05	133	0.88	87	0.80	68	0.72	52	0.75	58	0.72	52	0.50	20	0.45	16	0.78	64
18,	0.89	90	1.77	383	0.90	92	1.00	119	0.86	82	1.22	184	0.65	40	0.70	48	0.62	35	0.50	20	0.45	16	0.80	68
19,	1.30	209	1.75	376	0.90	92	1.05	133	0.84	78	1.10	147	0.65	40	0.65	40	0.50	20	0.55	26	0.45	16	0.90	92
20,	1.56	303	2.50	696	0.89	90	1.08	141	0.82	73	0.92	97	0.65	40	0.60	32	0.50	20	0.52	22	0.45	16	0.90	92
21,	0.82	73	1.90	436	0.89	90	1.16	166	0.82	73	0.82	73	0.65	40	0.60	32	0.48	18	0.50	20	0.45	16	1.10	147
22,	0.82	73	1.58	310	0.89	90	1 20	178	0.80	68	0.80	68	0.65	40	0.58	30	0.49	19	0.50	20	0.45	16	0.70	48
23,	0.89	90	1.58	310	0.88	87	1.26	197	0.79	66	0.79	66	1.05	133	0.56	27	0.72	52	0.50	20	0.45	16	0.62	35
24.	1.00	119	2.00	477	0.88	87	1.30	209	0.78	64	0.78	64	1.00	119	0.54	25	0.68	45	0.50	20	0.45	16	0.60	32
25,	1.04	130	1.70	356	1.80	395	1.14	159	0.78	64	0.75	58	0.72	52	0.52	22	0.52	22	0.50	20	0.52	22	0.60	32
26,	1.01	122	1.43	254	1.48	273	1.10	147	0.78	64	0.74	56	0.65	40	0.51	21	0.50	20	0.50	20	0.62	35	*1.10	50
27,	0.84	78	1.32	216	1.36	229	1.09	144	0.78	64	0.73	54	0.65	40	0.50	20	0.50	20	0.50	20	0.58	30	*1.10	50
28,	0.80	68	1.32	216	1.31	212	1.08	141	0.78	64	0.72	52	0.64	38	0.50	20	0.55	26	0.50	20	0.50	20	*1.10	50
29,	0.80	68	------	------	1.27	200	1.14	159	0.78	64	0.70	48	0.63	37	0.50	20	0.68	45	0.50	20	0.45	16	*1.20	50
30,	0.82	73	------	------	1.23	187	1.48	273	0.78	64	0.69	46	0.62	35	0.50	20	0.58	30	0.50	20	0.45	16	*1.20	50
31,	0.85	80	------	------	1.17	169	------	------	0.78	64	------	------	0.60	32	0.50	20	------	------	0.50	20	------	------	*1.20	50

*Corrected for back water.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ANALOMINK CREEK, AT HENRYVILLE, MONROE COUNTY, PA.

1910.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	*1.00	75	0.90	92	1.85	416	0.95	106	1.39	240	0.95	106	0.75	58	0.53	24	0.62	35	0.50	20	0.45	16	0.45	16
2,	*1.00	75	0.90	92	1.90	436	0.92	97	1.32	216	1.00	119	0.74	56	0.52	22	0.62	35	0.49	19	0.45	16	0.45	16
3,	*1.00	75	0.90	92	2.20	561	0.90	92	1.29	206	0.88	87	0.72	52	0.50	20	0.80	68	0.48	18	0.45	16	0.45	16
4,	0.80	68	0.90	92	1.72	364	0.89	90	1.22	184	0.82	73	0.70	48	0.70	48	0.80	68	0.48	18	0.68	45	0.45	16
5,	1.00	119	0.90	92	1.70	356	0.87	85	1.19	175	0.80	68	0.68	45	0.55	26	0.58	30	0.46	17	0.62	35	0.45	16
6,	1.20	178	0.90	92	1.68	348	0.87	85	1.15	162	0.98	114	0.65	40	0.50	20	0.65	40	0.45	16	0.57	28	0.45	16
7,	1.00	119	0.90	92	2.00	477	0.87	85	1.12	153	0.88	87	0.60	32	0.50	20	0.68	45	0.45	16	0.52	22	0.45	16
8,	*1.80	120	0.90	92	1.55	299	0.85	80	1.15	162	0.80	68	0.80	68	0.65	40	0.58	30	0.45	16	0.50	20	0.45	16
9,	*1.80	120	*1.00	90	1.52	288	0.83	75	1.18	172	0.80	68	0.76	60	0.65	40	0.55	26	0.45	16	0.50	20	0.45	16
10,	*1.80	120	*1.00	90	1.52	288	0.83	75	1.08	141	1.00	119	0.71	50	0.70	48	0.55	26	0.45	16	0.50	20	0.45	16
11,	1.00	119	*1.00	90	1.40	243	0.82	73	1.00	119	0.95	106	0.66	42	0.60	32	0.55	26	0.45	16	0.50	20	0.45	16
12,	1.00	119	0.90	92	1.35	226	0.81	70	0.95	106	0.95	106	0.59	31	0.52	22	0.55	26	0.45	16	0.50	20	0.45	16
13,	1.00	119	0.90	92	1.32	216	0.80	68	0.90	92	0.95	106	0.60	32	0.50	20	0.55	26	0.45	16	0.48	18	0.45	16
14,	1.10	147	0.90	92	1.30	209	0.79	66	0.88	87	1.00	119	0.60	32	0.50	20	0.55	26	0.45	16	0.46	17	0.45	16
15,	1.10	147	0.90	92	1.25	194	0.78	64	0.85	80	1.00	119	0.60	32	0.50	20	0.55	26	0.45	16	0.45	16	0.45	16
16,	1.10	147	0.92	97	1.20	178	0.78	64	0.85	80	1.00	119	0.60	32	0.50	20	0.55	26	0.45	16	0.45	16	0.45	16
17,	1.10	147	1.00	119	1.15	162	1.39	240	0.84	78	1.10	147	0.60	32	0.50	20	0.55	26	0.45	16	0.45	16	0.45	16
18,	1.00	119	1.15	162	1.10	147	2.75	812	0.83	75	1.10	147	0.60	32	0.50	20	0.55	26	0.45	16	0.45	16	0.45	16
19,	0.75	58	1.30	209	1.15	162	1.75	376	0.82	73	1.00	119	0.60	32	0.50	20	0.55	26	0.45	16	0.45	16	0.45	16
20,	0.80	68	1.30	209	1.15	162	1.50	280	0.81	70	0.90	92	0.60	32	0.50	20	0.55	26	0.45	16	0.45	16	0.45	16
21,	0.80	68	1.40	243	1.15	162	1.50	280	0.80	68	0.95	106	0.60	32	0.50	20	0.50	20	0.45	16	0.45	16	0.45	16
22,	c2.25	583	1.30	209	1.15	162	1.50	280	0.79	66	0.90	92	0.60	32	0.50	20	0.48	18	0.45	16	0.45	16	0.45	16
23,	1.30	209	1.20	178	1.15	162	1.35	226	0.90	92	0.82	73	0.60	32	0.50	20	0.46	17	0.45	16	0.45	16	1.48	273
24,	1.18	172	1.20	178	1.15	162	1.50	280	1.00	119	0.82	73	0.60	32	0.50	20	0.45	16	0.45	16	0.45	16	1.35	226
25,	1.04	130	1.20	178	1.12	153	a2.30	605	1.00	119	0.76	60	0.59	31	0.50	20	0.45	16	0.45	16	0.45	16	1.15	162
26,	1.02	125	1.20	178	1.10	147	1.70	356	1.00	119	0.75	58	0.58	30	0.50	20	0.50	20	0.45	16	0.45	16	0.90	92
27,	1.00	119	1.15	162	1.08	141	1.55	299	1.00	119	0.75	58	0.57	28	0.50	20	0.50	20	0.45	16	0.45	16	0.68	45
28	1.00	119	1.75	376	1.05	133	1.55	299	0.90	92	0.75	58	0.56	27	0.50	20	0.50	20	0.45	16	0.45	16	0.58	30
29,	0.98	114	------	------	1.02	125	1.65	337	0.85	80	0.75	58	0.56	27	0.50	20	0.50	20	0.45	16	0.45	16	0.50	20
30,	0.96	108	------	------	1.00	119	1.55	299	0.80	68	0.75	58	0.55	26	0.50	20	0.50	20	0.45	16	0.45	16	0.50	20
31,	0.91	95	------	------	0.98	114	------	------	0.82	73	------	------	0.54	25	0.45	16	------	------	0.45	16	------	------	b0.50	20

a Maximum 3.30′ at 8 a. m.=1070 sec. ft. b Interpolated. c Maximum 2.50′ at 8 a. m.=696 sec. ft. *Back water from ice. Discharge reduced.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ANALOMINK CREEK, AT HENRYVILLE, MONROE COUNTY, PA.

1911.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	.50	20	1.00	119	.75	58	.90	92	.87	85	.90	92	.70	48	.69	46	.75	58	.70	48	.98	114	.95	106
2,	1.25	194	1.00	119	.75	58	.90	92	.86	82	.90	92	.70	48	.68	45	.75	58	.70	48	.95	106	.95	106
3,	1.88	428	1.00	119	.70	48	.90	92	.85	80	.85	80	.70	48	.67	43	.75	58	.70	48	.92	97	.95	106
4,	1.90	436	1.00	119	.70	48	.90	92	.85	80	.80	68	.70	48	.66	42	.75	58	.70	48	.90	92	1.00	119
5,	1.55	299	1.00	119	.70	48	.90	92	.85	80	.80	68	.70	48	.65	40	.75	58	.70	48	.90	92	.96	108
6,	1.22	184	1.00	119	.70	48	1.08	141	.85	80	.80	68	.70	48	.64	38	1.48	273	.70	48	.90	92	.95	106
7,	1.15	162	1.00	119	.70	48	1.08	141	.85	80	.80	68	.70	48	1.06	136	1.38	236	.70	48	.90	92	.95	106
8,	.95	106	1.00	119	.70	48	1.05	133	.83	75	.80	68	.70	48	.88	87	1.02	125	.70	48	.90	92	.95	106
9,	.82	73	1.00	119	.70	48	1.08	141	.80	68	.80	68	.70	48	.60	32	.88	87	.70	48	.90	92	.95	106
10,	.76	60	.80	68	.70	48	1.10	147	.78	64	.80	68	.70	48	.60	32	.85	80	.70	48	.90	92	.95	106
11,	.75	58	.80	68	.70	48	1.10	147	.75	58	.95	106	.70	48	.60	32	.85	80	.70	48	.90	92	.95	106
12,	.75	58	.80	68	.70	48	1.02	125	.75	58	1.10	147	.70	48	.60	32	1.10	147	.70	48	.98	114	.95	106
13,	1.08	141	.78	64	.70	48	.95	106	.75	58	2.50	696	.70	48	.60	32	1.00	119	.70	48	1.00	119	.95	106
14,	1.52	288	.75	58	.75	58	.95	106	.75	58	2.25	583	.70	48	.60	32	.85	80	.70	48	.98	114	1.50	280
15.	1.12	153	.75	58	1.00	119	1.08	141	.75	58	1.30	209	.70	48	.60	32	.72	52	.70	48	.95	106	1.45	262
16,	.90	92	.75	58	.85	80	1.00	119	.74	56	.95	106	.70	48	.60	32	.70	48	.70	48	.92	97	1.25	194
17,	1.65	337	.80	68	.70	48	.95	106	.73	54	.90	92	.80	68	.60	32	.70	48	1.50	280	.90	92	1.05	133
18,	2.25	583	.90	92	.70	48	.90	92	.72	52	.90	92	.70	48	.60	32	.70	48	1.10	147	1.20	178	.98	114
19,	1.80	395	.90	92	.70	48	.90	92	.71	50	.90	92	.70	48	.60	32	.70	48	.85	80	1.12	153	.95	106
20,	1.80	395	1.00	119	.70	48	.90	92	.70	48	.90	92	.70	48	.60	32	.70	48	.80	68	.95	106	.95	106
21,	.95	106	1.00	119	.80	68	.90	92	.69	46	.88	87	.70	48	.58	30	.70	48	.80	68	.90	92	.95	106
22,	.78	64	1.00	119	.80	68	1.48	273	.68	45	.86	82	.70	48	.56	27	.70	48	.80	68	.90	92	1.70	356
23.	.75	58	1.00	119	.80	68	1.15	162	.67	43	.86	82	1.10	147	.55	26	.70	48	1.65	337	.90	92	1.70	356
24.	.75	58	.75	58	.80	68	1.00	119	.66	42	.83	75	.85	80	.53	24	.70	48	1.68	348	.90	92	1.55	299
25.	.75	58	.75	58	.80	68	.95	106	.65	40	.80	68	.80	68	.52	22	.70	48	1.55	299	.90	92	1.35	226
26	.75	58	.90	92	.80	68	.92	97	.64	38	.77	62	.75	58	.50	20	.70	48	1.50	280	.90	92	1.15	162
27.	.75	58	.75	58	1.38	236	.90	92	.63	37	.75	58	.74	56	.50	20	.70	48	1.45	262	.90	92	.98	114
28,	.75	58	.75	58	1.25	194	.90	92	.62	35	.73	54	.73	54	1.75	376	.70	48	1.38	236	.90	92	.95	106
29,	.75	58	------	------	.95	106	.90	92	.61	34	.70	48	.72	52	.90	92	.70	48	1.28	203	1.00	119	1.50	280
30,	.75	58	------	------	.90	92	.90	92	.61	34	.70	48	.71	50	.78	64	.70	48	1.12	153	.97	111	1.50	280
31,	1.00	119	------	------	.90	92	------	------	.61	34	------	------	.70	48	.75	58	------	------	1.00	119	------	------	1.46	265

ESTIMATED MONTHLY DISCHARGE, ANALOMINK CREEK, AT HENRYVILLE, MONROE COUNTY.

(Drainage area 35 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1908.					
September,	68	9	----------	----------	----------
October,	299	10	42	1.200	1.383
November,	52	22	35	1.000	1.116
December,	70	32	42	1.200	1.383
1909.					
January,	303	40	108	3.09	3.56
February,	696	82	252	7.20	7.50
March,	395	87	143	4.09	4.72
April,	387	90	149	4.26	4.75
May,	395	64	134	3.83	4.42
June,	184	46	81	2.31	2.58
July,	133	32	48	1.37	1.58
August,	58	20	27	0.77	0.89
September,	80	16	30	0.86	0.96
October,	66	15	21	0.60	0.69
November,	35	16	19	0.54	0.60
December,	295	16	60	1.71	1.97
The year,	696	15	89	2.55	34.22
1910.					
January,	696	58	132	3.771	4.347
February,	376	90	138	3.943	4.106
March,	561	114	236	6.743	7.774
April,	1070	64	208	5.943	6.630
May,	240	66	119	3.400	3.920
June,	147	58	93	2.657	2.965
July,	68	25	37	1.057	1.219
August,	48	16	24	0.686	0.791
September,	68	16	28	0.800	0.893
October,	20	16	16	0.457	0.527
November,	45	16	19	0.543	0.606
December,	273	16	40	1.143	1.318
The year,	1070	16	91	2.595	35.096
1911.					
January,	583	20	168	4.800	5.534
February,	119	58	92	2.629	2.738
March,	236	48	72	2.057	2.371
April,	273	92	117	3.343	3.730
May,	85	34	57	1.629	1.878
June,	696	48	121	3.457	3.857
July,	147	48	54	1.543	1.779
August,	376	20	52	1.486	1.713
September,	273	48	76	2.171	2.422
October,	348	48	120	3.429	3.953
November,	178	92	103	2.943	3.283
December,	356	106	166	4.743	5.468
The year,	696	20	100	2.853	38.726

BRODHEADS CREEK.

DESCRIPTION OF BASIN.

Brodheads creek, a tributary of the Delaware river, in the central part of Monroe county, and one of the largest streams therein, drains approximately 285 square miles. Rising in the Pocono mountains, in the northwestern corner of Barrett township, it follows a southerly course through a sparsely inhabited area covered with second growth timber at its headwaters, thence through an agricultural region, to its mouth one mile above Delaware Water Gap, its total length being approximately 28 miles. Its source is at an elevation of about 2,000 feet above sea level, and its mouth 290 feet. The principal tributaries are Analomink, or Holler creek, McMichaels and Marshall creeks, the watershed including numerous small lakes, ponds and swamps, the stream lying entirely within the glacial area, while on it and its tributaries are numerous falls and rapids. The main stream is rapid, flowing over a rocky bed, between usually steep banks, and is generally in a narrow valley except near the headwaters where the valleys widen and the slopes are more gradual. In this drainage basin lie the principal boroughs and villages of the county, several of which obtain water supplies from the creek or its tributaries. Brodheads creek and its affluents are used to some extent for power purposes, while available sites are as yet undeveloped.

The average yearly rainfall over this watershed is from 45 to 50 inches.

The flow of this stream has been measured since September 17, 1908, at Analomink, 9 miles above the mouth.

DELAWARE BASIN—STATION NO. 10.

BRODHEADS CREEK AT ANALOMINK.

DESCRIPTION OF STATION.

This station was established on September 17, 1908, by the Water Supply Commission of Pennsylvania, on a single span, steel, through-truss, highway bridge, about one-quarter mile above the village of Analomink, but gage readings were not commenced until December

10, 1908. A 14-foot staff gage is bolted to the downstream face of the left abutment. A bench mark is located on the top of a reddish stone in the left abutment, bottom course, outer downstream corner, and the elevation is 2.11 feet above the arbitrary zero of the gage.

Discharge measurements are made from the downstream side of the bridge, or at low stages by wading above the bridge. The initial point for soundings is top angle of downstream handrail at left end, which is called 2.3 ft. station. The channel above is straight for 100 feet, and below for 300 feet. A wooden dam 1,000 feet downstream backs the water up to within a short distance of the bridge. The left bank is high and does not overflow, but at extreme stages the right bank overflows and water passes across the road at right end of the bridge. The bed is mostly solid rock, and permanent, containing a large projecting ledge of rock near the left bank. The gage is read twice daily by Wilbur Imbt.

Since the establishment of this station, eight discharge measurements have been made. Owing to an insufficient number of discharge measurements, no rating curve has as yet been determined, and, therefore, only the discharge measurements and gage heights are published.

DISCHARGE MEASUREMENTS, BRODHEADS CREEK, AT ANALOMINK, MONROE COUNTY, PA.

(Drainage area 120 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height	Discharge.	Remarks.
1	1908. Sept. 17,	Grant,	26	36	0.53	0.37	19	Wading msm't. 200' above railroad bridge.
2	1909. Feb. 26,	do	60	290	4.02	3.25	1168	Msm't. from bridge.
3	May 1,	do	62	300	3.98	3.40	1195	do
4	July 2,	do	72	100	1.02	1.30	102	Wading msm't. 1000' above railroad bridge.
5	July 8,	do	73	88	0.85	1.17	75	do
6	1910. May 15,	Langenheim,	59	121	1.88	1.56	228	Msm't. from bridge.
7	Nov. 11,	Langenheim,	36	49	0.94	1.00	46	Wading msm't. 150' above highway bridge.
8	1911. Aug. 11,	Cornell,	50	57	1.10	0.90	63	Wading msm't. 150 feet above bridge.

DAILY MEAN GAGE HEIGHTS, IN FEET, OF BRODHEADS CREEK, AT ANALOMINK, MONROE COUNTY, PA.

1908.	DEC.	1909.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	G H	DAY.	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H
1,	--------	1,	1.75	2.5	2.5	2.25	4.0	1.55	1.5	1.05	0.6	1.0	1.0	1.2
2,	--------	2,	1.6	2.5	2.7	2.2	4.15	1.65	1.45	1.0	0.6	1.0	1.2	1.2
3,	--------	3,	1.7	2.65	2.85	2.1	3.9	1.8	1.4	0.9	0.5	1.0	1.25	1.2
4,	--------	4,	1.8	2.75	2.95	2.0	2.95	1.9	1.4	0.9	0.5	0.9	1.25	1.1
5,	--------	5,	2.15	2.95	3.2	2.0	2.7	2.4	1.3	0.8	0.6	0.9	1.0	1.1
6,	--------	6,	4.15	3.25	2.75	2.3	2.65	2.15	1.3	0.65	0.6	0.8	1.0	1.1
7,	--------	7,	3.8	3.2	2.7	2.15	2.6	2.0	1.25	0.55	0.6	0.8	1.0	1.3
8,	--------	8,	3.5	2.9	2.8	2.0	2.65	1.85	1.2	0.5	0.5	0.75	1.15	1.25
9,	--------	9,	3.4	2.9	2.9	2.05	2.55	1.9	1.1	0.5	0.5	0.7	1.2	1.2
10,	1.95	10,	2.65	3.95	2.7	1.95	2.45	2.0	1.1	0.65	0.9	0.7	1.0	1.2
11,	1.95	11,	2.5	3.8	2.5	1.9	2.9	2.0	1.1	0.6	1.2	0.6	1.0	1.2
12,	1.90	12,	2.65	3.5	2.5	2.15	2.9	1.9	1.0	0.55	1.0	1.45	1.0	1.0
13,	1.80	13,	2.5	3.15	2.55	2.35	2.6	2.0	1.0	0.5	1.0	1.4	1.0	1.8
14,	1.80	14,	2.7	3.1	2.45	2.3	2.6	2.0	1.0	0.45	1.1	1.3	1.1	3.3
15.	1.90	15,	2.8	3.4	2.4	2.9	2.85	1.95	1.0	0.4	1.1	1.15	1.05	3.0
16,	1.90	16,	2.8	5.2	2.0	2.95	2.5	1.8	1.15	0.9	1.2	1.0	1.0	3.0
17,	1.85	17.	2.65	4.6	2.0	2.95	2.1	2.0	1.3	1.1	1.7	1.05	1.2	1.9
18,	2.15	18,	2.9	4.3	2.0	2.75	2.05	3.0	1.2	1.1	1.4	1.15	1.2	1.6
19,	1.95	19,	2.8	3.8	2.15	2.55	2.0	2.7	1.2	1.0	1.4	1.2	1.3	1.5
20,	2.00	20,	2.9	7.2	1.95	3.1	1.8	2.2	1.1	1.0	1.3	1.0	1.3	1.5
21,	1.95	21,	2.8	4.6	1.9	3.1	2.0	2.0	1.0	1.0	1.25	1.0	1.4	1.35
22,	1.80	22,	2.8	4.1	2.0	2.95	2.0	1.9	1.1	1.0	1.2	1.0	1.2	1.25
23,	1.85	23,	3.0	4.35	1.9	3.8	2.0	1.85	1.6	0.9	1.35	1.25	1.3	1.5
24,	1.80	24,	3.3	4.5	1.9	3.5	2.0	1.65	1.5	0.9	1.55	1.3	1.35	1.4
25,	1.90	25,	3.3	4.25	4.2	2.9	1.95	1.55	1.35	0.9	1.45	1.2	1.65	1.35
26,	1.85	26,	3.15	3.45	3.5	2.7	1.9	1.5	1.3	0.8	1.4	1.2	1.8	1.3
27.	1.65	27,	3.05	3.25	3.0	2.6	2.0	1.5	1.25	0.8	1.3	1.0	1.55	1.3
28,	1.65	28,	2.9	3.15	2.9	2.55	2.0	1.55	1.2	0.8	1.3	1.0	1.5	1.5
29,	1.55	29,	2.85	--------	2.7	2.8	2.05	1.6	1.15	0.9	1.15	1.0	1.4	1.4
30,	1.60	30	2.75	--------	2.6	3.2	2.0	1.55	1.05	0.9	1.0	1.0	1.4	1.0
31,	1.70	31,	2.75	--------	2.35	--------	1.7	--------	1.0	0.8	--------	1.0	--------	1.0

DAILY MEAN GAGE HEIGHTS, IN FEET, OF BRODHEADS CREEK, AT ANALOMINK, MONROE COUNTY, PA.

1910.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	G H	G H	G H	G H	G H	G H	G H.	G H	G H	G H	G H	G H
1,		1.80	3.95	1.80	2.95	1.80	1.15	.80	.85	.80	.90	1.00
2,		1.80	4.20	1.80	2.85	1.80	1.10	.80	.90	.75	.80	1.00
3,		1.80	3.95	1.70	2.70	1.75	1.10	.80	1.00	.55	.95	1.00
4,		1.80	3.65	1.70	2.45	1.75	1.10	.80	1.10	.50	1.00	1.00
5.		1.80	3.45	1.70	2.10	1.70	1.10	.80	1.05	.50	1.15	1.00
6.		2.50	3.70	1.85	2.00	2.00	1.00	.80	1.00	.80	1.05	1.00
7,		3.35	4.60	1.90	2.00	1.90	1.00	.80	1.00	1.00	1.00	1.00
8,		3.10	3.80	1.80	1.90	1.70	1.15	.80	.95	1.00	.95	.95
9,		2.90	3.40	1.80	1.90	1.70	1.05	.95	.90	1.00	1.00	.90
10,		2.10	3.05	1.80	1.90	1.80	1.00	1.00	.85	1.00	1.00	.85
11,		2.00	2.90	1.80	1.90	1.90	.90	.95	.85	1.00	1.00	.80
12,		3.15	2.90	1.80	1.90	2.00	.90	.90	.80	1.00	1.00	.80
13,	1.20	2.95	2.90	1.75	1.80	2.00	.90	.90	.80	1.00	1.00	.80
14,	1.20	3.15	2.95	1.70	1.80	2.00	.85	.90	.80	1.00	1.00	.80
15,	1.40	1.95	2.80	1.70	1.80	1.85	.80	.90	.80	1.00	1.00	.80
16,		1.85	2.70	1.70	1.80	2.10	.90	.90	.80	1.00	1.00	.70
17,		1.85	2.70	1.75	1.70	1.90	1.00	.90	.80	1.00	1.00	.70
18,		1.75	2.45	a5.45	1.70	2.00	1.00	.90	.80	1.00	1.00	.70
19,		1.65	2.30	3.90	1.70	1.95	1.00	.90	.80	1.00	1.00	.70
20,		1.75	2.30	3.85	1.70	1.85	.90	.90	.75	.90	1.00	.70
21,		3.00	2.65	3.75	1.70	1.80	.90	.80	.60	.90	1.00	.85
22,		2.80	2.65	3.20	1.70	1.80	.90	.80	.55	.90	1.00	1.00
23,		2.35	2.50	2.85	1.70	1.75	.80	.80	.50	.95	1.00	1.20
24,		2.05	2.40	3.25	1.65	1.60	.80	.80	.50	.90	1.00	1.35
25,		2.30	2.25	a5.35	2.00	1.45	.80	.80	.55	.90	1.15	2.25
26,		2.45	2.15	5.30	2.10	1.15	.80	.80	.75	.90	1.05	1.20
27,		2.45	2.10	4.25	2.05	1.10	.80	.80	.90	.90	1.00	1.30
28,		3.15	2.10	3.75	2.00	1.20	.80	.70	.80	.90	.95	1.50
29,	2.10		1.95	3.20	1.80	1.20	.80	.70	.80	.90	.95	1.50
30.	1.95		1.90	3.00	1.80	1.20	.80	.70	.80	.90	1.00	1.50
31,	1.90		1.80		1.80		.80	.70		.90		1.45

a Max.=5.90′

DAILY MEAN GAGE HEIGHTS, IN FEET, OF BRODHEADS CREEK, AT ANALOMINK, MONROE COUNTY, PA.

1911.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H
1,	1.50	1.32	1.59	2.00	1.78	1.90	1.15	1.00	3.22	1.65	1.90	1.88
2,	1.80	1.20	1.45	2.00	1.62	1.55	1.14	1.00	2.28	2.25	1.82	1.80
3,	2.90	1.20	1.30	1.78	1.60	1.30	1.10	1.00	2.10	1.78	1.72	1.70
4,	2.50	1.38	1.18	1.72	1.58	1.28	1.10	1.00	1.85	1.62	1.70	1.72
5,	2.35	1.38	1.25	2.62	1.50	1.50	1.10	1.00	1.75	1.52	1.65	1.70
6,	1.90	1.45	1.35	2.78	1.50	1.69	1.08	0.98	2.80	1.50	1.61	1.62
7,	1.85	1.67	1.35	2.60	1.40	1.62	1.32	1.49	2.08	1.65	2.22	1.62
8,	1.60	1.28	1.32	2.52	1.32	1.60	1.12	1.40	2.00	1.74	1.86	1.65
9,	1.50	1.22	1.20	2.38	1.30	1.50	1.02	1.10	2.00	1.70	1.80	1.60
10,	1.45	1.25	1.54	2.32	1.28	1.42	1.00	0.98	1.90	1.62	1.72	1.58
11,	1.40	1.14	1.50	2.36	1.30	1.30	1.04	0.90	2.20	1.80	1.64	1.55
12,	1.40	1.22	1.40	2.30	1.30	2.05	0.94	0.82	2.08	1.68	1.70	1.54
13,	1.45	1.18	1.58	2.08	1.30	a3.05	1.50	0.75	1.98	1.60	1.99	1.56
14,	1.70	1.18	1.60	2.22	1.30	3.10	1.32	0.90	1.85	1.54	1.78	1.54
15,	2.00	1.52	1.80	2.35	1.20	2.60	1.15	0.90	1.80	1.50	1.76	1.85
16,	1.95	1.20	1.86	2.20	1.20	2.28	1.15	0.88	1.81	1.52	1.76	2.30
17,	1.95	1.12	1.95	2.05	1.19	2.15	1.18	0.85	1.70	1.65	1.60	2.45
18,	2.95	1.22	1.64	1.90	1.15	1.85	1.35	0.80	1.60	3.62	2.25	2.12
19,	2.65	1.35	1.50	1.89	1.15	1.75	1.19	0.94	1.52	2.95	2.20	2.00
20,	2.25	2.08	1.62	2.85	1.10	1.56	1.10	0.96	1.42	2.85	2.12	2.00
21,	1.50	2.52	1.68	2.48	1.08	1.50	1.05	0.88	1.38	2.95	2.10	1.90
22,	1.60	1.70	1.75	1.96	1.06	1.42	1.08	0.82	1.40	3.05	1.98	2.05
23,	1.50	1.25	1.88	2.00	1.05	1.36	1.07	0.80	1.18	3.60	1.90	3.05
24,	1.50	1.15	1.70	1.98	1.00	2.00	1.45	0.82	1.14	3.25	2.12	2.98
25,	1.50	1.22	1.66	2.20	1.20	1.66	1.50	1.05	1.16	2.95	2.08	2.75
26,	1.40	1.24	1.60	2.05	1.16	1.50	1.40	1.12	1.12	2.65	2.00	2.33
27,	1.40	1.72	2.70	1.85	1.10	1.35	1.29	1.15	1.20	2.60	1.98	2.30
28,	1.50	1.52	2.90	1.88	1.10	1.30	1.20	1.12	1.20	2.45	1.88	2.18
29,	1.40	----------	2.36	1.80	1.00	1.30	1.14	4.65	1.68	2.18	2.08	2.14
30,	1.45	----------	2.48	1.68	1.00	1.22	1.10	3.50	1.55	2.00	2.00	2.00
31,	1.50	----------	2.25	----------	1.05	----------	1.04	4.30	----------	1.92	----------	1.90

aMax. 4.1′ at 5 p. m.

POCONO CREEK.

DESCRIPTION OF BASIN.

Pocono creek, the largest tributary of McMichaels creek, lies in the south central part of Monroe county, draining an area of approximately 42 square miles. It rises in the Pocono mountains in the central part of the county, flowing in a general southerly direction through an uninhabited area, covered with second growth timber, to a point about six miles west of Stroudsburg, where it turns to an easterly direction through a farming section, to its mouth in the center of the town, a total distance of approximately 12 miles. In its upper sections the slope of the stream is steep, while in the lower section it is much flatter, and it lies entirely within the glacial area. A few grist mills operated by water-power exist on the lower sections of this creek. The average yearly rainfall over this watershed is from 45 to 50 inches.

The flow has been measured since August 3, 1911, at the Spoke Factory Bridge, near Stroudsburg, 2 miles above the mouth.

DELAWARE BASIN—STATION NO. 11.

POCONO CREEK NEAR STROUDSBURG.

DESCRIPTION OF STATION.

This station was established August 3, 1911, by the Water Supply Commission of Pennsylvania, on a single span, covered, wooden bridge about two miles above Stroudsburg, and is being maintained by Meikleham & Dinsmore, Engineers, New York City. A standard chain gage is fastened to the upstream guardrail of the bridge near the left bank. The length of chain from center of rivet to bottom of weight is 14.04 feet. Bench mark No. 1 is a large staple on the inside of the right upstream one of a pair of angling wooden braces, elevation 15.73 feet above zero of gage. Bench mark No. 2 is top of flat stone on top of face of left abutment, near upstream corner, below angle between upstream side of wooden bridge and end of wingwall guard wall, about 10 inches from side of bridge, elevation 10.67 feet above zero of gage.

Discharge measurements are made from the downstream side of bridge, and by wading under the bridge. The initial point for soundings is face of downstream abutment, right end. The channel above the bridge curves gently to the right for 600 feet, and below it is straight for 450 feet. The banks are high and rarely overflow except during extreme stages. The bed is of gravel and small stones. The gage is read twice daily by George K. Brands.

Since the establishment of this station, four discharge measurements have been made. Owing to the insufficient number of discharge measurements, no rating curve has been computed at this station, and only the discharge measurements and daily gage heights are published.

DISCHARGE MEASUREMENTS, POCONO CREEK, NEAR STROUDSBURG, MONROE COUNTY, PA.

(Drainage area 38 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1911.							
1	Aug. 14,	Cornell,	26	26	0.19	2.16	24	Wading msmt.
2	Oct. 3,	do	33	46	1.83	2.84	84	do
3	Oct. 19,	do	55	76	2.62	3.50	199	do
4	Oct. 23,	do	63	175	2.93	4.42	513	From bridge.

MEAN DAILY GAGE HEIGHT, IN FEET, OF POCONO CREEK, NEAR STROUDSBURG, MONROE COUNTY, PA.

1911. DAY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1,	----------	3.74	2.45	2.82	2.82
2,	----------	3.36	2.99	2.70	2.82
3,	----------	3.20	2.78	2.75	2.70
4,	----------	2.73	2.42	2.65	2.78
5,	----------	2.76	2.50	2.65	2.82
6,	----------	3.55	2.45	2.60	2.80
7,	----------	2.75	2.65	3.00	2.72
8,	----------	2.80	2.55	2.78	2.72
9,	----------	2.80	2.50	2.68	2.72
10,	2.12	2.70	2.50	2.72	2.72
11,	2.12	2.69	2.60	2.60	2.72
12,	2.15	2.64	2.60	2.60	2.76
13,	2.15	2.55	2.38	2.88	2.74
14,	2.00	2.42	2.40	2.70	2.72
15,	2.05	2.40	2.35	2.75	2.88
16,	2.05	2.50	2.42	2.68	3.20
17,	1.92	2.40	2.35	2.72	3.20
18,	1.88	2.30	2.88	3.32	3.00
19,	2.15	2.28	3.42	3.22	2.95
20,	2.05	2.31	3.45	3.20	2.90
21,	2.00	2.39	3.62	3.00	2.96
22,	2.05	2.31	2.65	3.02	3.08
23,	2.00	2.28	b4.16	2.90	3.26
24	2.05	2.22	3.85	2.95	3.24
25,	2.05	2.24	3.60	2.92	3.00
26,	2.15	2.22	3.50	2.88	2.95
27,	2.05	2.23	3.35	2.88	3.30
28,	2.10	2.27	3.30	2.92	2.98
29	2.10	2.35	3,18	3.10	2.96
30,	3.25	2.45	3.22	2.95	2.95
31,	a4.32	----------	2.91	----------	2.98

aMaximum 4.50 ft.=556 Sec.-ft. at 4 p. m.
bMaximum 4.42 ft. at 11 a. m.=517 Sec.-ft.

McMICHAELS CREEK.

DESCRIPTION OF BASIN.

McMichaels creek, the largest tributary of Brodheads creek, lies in the south central part of Monroe county, draining an area of approximately 105 square miles. It rises in the Pocono mountains, flows first in a southerly direction through an uninhabited area covered with second growth, and thence turns easterly through a sparsely inhabited agricultural region, to its mouth a short distance below Stroudsburg, a distance of approximately 20 miles. In its upper section the slope of the creek is steep, while in the lower section it is much flatter, and it lies entirely within the glacial area. Pocono creek, with a drainage area of approximately 42 square miles, is the largest tributary, while several lakes and ponds lie within its watershed. A few grist mills operated by water power exist in the lower section of the creek and its tributaries.

The average yearly rainfall over this watershed is from 45 to 50 inches.

The flow has been measured at two points; namely, at the Seventh Street Viaduct, Stroudsburg, from September 16, 1908, to July 16, 1910, at which time the station was discontined, and at the railroad bridge near the car shops above Stroudsburg since August 3, 1911. The first station was a short distance below the mouth of Pocono creek, whereas the present station is about one mile above the mouth of Pocono creek.

DELAWARE BASIN—STATION NO. 12.

McMICHAELS CREEK AT SEVENTH STREET VIADUCT, STROUDSBURG.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania on September 16, 1908, on the deck, plate-girder viaduct at Seventh Street, Stroudsburg, and was discontinued on July 16th, 1910, due to the inability of maintaining a gage at this point. A gaging station was re-established on August 3, 1911, at the railroad bridge near the car shops above Stroudsburg, the data of which is contained on page 76. A standard chain gage was fastened to the wooden guardrail on upstream side of the Seventh street bridge. The length of chain from center of rivet to bottom of weight was 35.78 feet, the elevation of the zero being arbitrary datum. A bench mark was established on the highest point on stone 2 feet 5½ inches out from center of face of left abutment; cross chiseled in stone near point; elevation 3.70 feet above zero of gage.

Discharge measurements were made from the downstream side of bridge, and by wading under bridge at low stages. The initial point for soundings is face of end post of downstream handrail, left bank. The channel above this bridge is straight for 200 feet, and is straight for 600 feet below. The right bank of normal channel is low, and during floods water spreads out under entire viaduct to railroad fill near right abutment. The left bank is high and does not overflow. The bed is of gravel and fairly permanent. Pocono creek enters from the left 1,000 feet upstream. The gage was read twice daily by Westbrook and Voss, Civil Engineers, Stroudsburg, who co-operated in reading this gage.

This station was not considered a good one for measuring extreme floods, as the water then spreads out over low ground under bridge at right of normal channel.

During the period when this station was in operation, 5 discharge measurements were made.

DISCHARGE MEASUREMENTS, McMICHAELS CREEK, AT STROUDSBURG, MONROE COUNTY, PA.

(Drainage area 105 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1908.							
1	Sept. 16,	Grant,	35	52	0.46	0.53	23.8	
	1909.							
2	Feb. 26,	do	63	175	5.19	3.40	909	
3	April 27,	do	50	125	2.92	2.40	365	
4	July 1,	do	45	76	1.18	1.26	89.5	
5	July 9,	do	43	68	0.98	1.11	65.8	

DISCHARGE TABLE FOR McMICHAELS CREEK, AT STROUDSBURG, MONROE COUNTY, FROM SEPTEMBER 16, 1908, TO JULY 16, 1910.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.30	19	.50	132	.70	487	.90	1280	.10	2335
.40	20	.60	152	.80	536	4.00	1360	.20	2430
.50	23	.70	173	.90	590	.10	1440	.30	2525
.60	27	.80	196	3.00	650	.20	1520	.40	2620
.70	32	.90	220	.10	710	.30	1605	.50	2720
.80	39	2.00	246	.20	770	.40	1690	.60	2820
.90	47	.10	273	.30	835	.50	1780	.70	2920
1.00	57	.20	302	.40	905	.60	1870	.80	3020
.10	68	.30	332	.50	980	.70	1960	.90	3120
.20	82	.40	365	.60	1050	.80	2050	6.00	3220
.30	97	.50	402	.70	1130	.90	2145		
.40	113	.60	442	.80	1205	5.00	2240		

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF McMICHAELS CREEK, AT STROUDSBURG, MONROE COUNTY, PA.

1908.	SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	1.31	99	1.56	144	0.76	35
2,	------	------	1.49	130	1.51	134	0.86	44
3,	------	------	1.36	107	1.46	124	0.81	39
4,	------	------	1.34	103	1.36	107	0.86	44
5,	------	------	1.31	99	1.06	64	0.84	42
6,	------	------	1.31	99	1.13	72	0.78	36
7,	------	------	1.31	99	1.24	88	1.36	107
8,	------	------	1.28	94	1.18	79	*1.36	107
9,	------	------	1.30	97	1.11	69	*1.36	107
10,	------	------	1.25	90	1.16	76	*1.34	103
11,	------	------	1.27	92	1.06	64	*1.30	97
12,	------	------	*1.24	88	1.11	69	*1.25	90
13,	------	------	*1.21	84	1.06	64	*1.25	90
14	------	------	*1.18	79	1.16	76	*1.23	86
15,	------	------	*1.15	75	1.14	74	*1.21	84
16,	0.53	24	*1.13	72	1.11	69	1.20	82
17,	*0.55	25	*1.11	69	1.26	91	1.18	79
18,	0.57	25	*1.09	67	1.16	76	1.26	91
19,	1.18	79	*1.07	65	1.11	69	1.30	97
20,	0.49	23	*1.05	62	1.26	91	1.28	94
21,	0.92	49	1.03	60	1.01	58	1.32	100
22,	0.74	34	0.98	55	1.06	64	1.26	91
23,	0.40	20	0.96	53	0.91	48	1.27	92
24,	0.40	20	1.02	59	0.86	44	1.24	88
25,	0.35	19	1.06	64	0.86	44	1.28	94
26,	1.00	57	1.56	144	0.81	39	1.30	97
27,	1.34	103	2.31	335	0.76	35	1.30	97
28,	1.34	103	1.86	210	0.76	35	1.30	97
29,	1.99	243	2.06	262	0.76	35	1.20	82
30,	1.39	111	1.71	175	0.81	39	1.30	97
31,	------	------	1.58	148	------	------	1.35	105

*Interpolated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF McMICHAELS CREEK, AT STROUDSBURG, MONROE COUNTY, PA.

1909	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.35	105	*1.65	162	*2.80	536	1.80	196	3.51	988	0.80	39	1.01	58	*1.15	75	*0.95	52	0.95	52	1.00	57	*0.88	45
2,	1.30	97	*1.70	173	*2.80	536	1.80	196	3.39	898	0.75	34	*0.99	56	1.09	67	0.90	47	1.05	62	0.85	43	*0.89	46
3,	1.35	105	*1.65	162	*2.80	536	2.00	246	3.27	815	0.85	43	*0.97	54	1.00	57	0.93	50	1.00	57	*0.95	52	0.90	47
4,	1.25	90	*1.70	173	*2.70	487	1.90	220	2.99	644	0.85	43	*0.95	52	0.95	52	*0.92	49	1.00	57	1.05	62	1.05	62
5,	1.60	152	*1.80	196	*2.60	442	1.85	208	2.79	531	0.85	43	*0.93	50	1.00	57	0.90	47	0.98	55	0.80	39	1.50	132
6,	3.65	1090	*1.75	184	*2.55	422	1.78	191	2.49	398	0.75	34	0.91	48	0.80	39	0.92	49	1.00	57	*0.88	45	1.50	132
7,	2.55	422	*1.70	173	*2.45	384	1.80	196	2.39	362	0.85	43	0.81	40	1.00	57	0.88	45	0.65	29	0.95	52	0.94	51
8,	2.50	402	*1.70	173	*2.50	402	1.68	169	2.28	326	0.84	42	*0.90	47	0.93	50	*0.93	50	*0.80	39	*1.00	57	1.00	57
9,	2.30	332	1.73	180	*2.55	422	1.70	173	2.18	296	0.74	34	1.02	59	0.86	44	0.98	55	0.95	52	1.05	62	1.23	87
10,	2.35	348	4.50	1780	2.51	406	1.75	184	2.18	296	0.64	29	0.95	52	0.70	32	1.00	57	0.88	45	1.05	62	1.30	97
11,	2.00	246	2.55	422	2.45	384	1.50	132	2.18	296	0.84	42	0.92	49	0.68	31	1.40	113	0.92	49	0.82	41	1.20	82
12,	1.95	233	2.30	332	2.45	384	1.65	162	2.13	282	0.94	51	1.05	62	0.75	34	1.32	100	0.95	52	*0.82	41	1.30	97
13,	1.90	220	2.25	317	2.30	332	2.25	317	1.98	241	*0.95	52	1.05	62	0.70	32	1.17	78	1.05	62	*0.85	43	1.20	82
14,	1.85	208	2.20	302	2.16	290	3.10	710	1.93	228	1.54	140	1.04	61	0.70	32	1.05	62	0.85	43	1.50	132	2.20	302
15.	1.85	208	2.55	422	2.14	285	3.08	698	1.78	191	*1.45	122	1.04	61	0.75	34	1.00	57	0.80	39	0.95	52	2.60	442
16.	1.80	196	4.20	1520	2.10	273	3.00	650	1.67	167	*1.40	113	1.92	225	1.02	59	1.00	57	*0.81	40	*0.94	51	1.98	241
17,	1.78	191	3.75	1168	2.00	246	3.00	650	1.57	146	1.33	102	1.28	94	1.32	100	1.61	154	*0.83	41	0.92	49	1.50	132
18,	1.75	184	3.05	680	2.00	246	2.72	497	1.47	126	1.13	72	1.30	97	1.30	97	1.40	113	*0.85	43	1.00	57	1.38	110
19,	1.60	152	3.00	650	2.05	260	2.70	487	1.37	108	1.23	87	1.30	97	1.50	132	*1.38	110	*0.85	43	*1.01	58	1.35	105
20,	1.65	162	5.60	2820	1.98	241	2.75	512	1.27	92	0.93	50	1.20	82	1.50	132	1.35	105	0.85	43	*1.02	59	1.30	97
21,	1.60	152	3.90	1280	1.95	233	2.75	512	1.67	167	0.93	50	1.00	57	1.50	132	*1.35	105	0.85	43	*1.03	60	1.30	97
22,	1.65	162	2.75	512	2.10	273	2.80	536	1.57	146	0.93	50	0.90	47	1.30	97	1.35	105	0.85	43	*1.04	61	1.15	75
23,	1.65	162	3.60	1050	2.16	290	2.70	487	1.47	126	1.13	72	1.10	68	1.50	132	1.20	82	0.90	47	1.05	62	1.20	82
24,	*1.60	152	4.35	1648	2.05	260	2.60	442	1.36	107	1.12	71	1.70	173	1.10	68	1.10	68	*0.92	49	0.85	43	1.20	82
25,	*1.60	152	3.58	1034	†3.31	842	2.55	422	1.36	107	1.12	71	1.60	152	1.00	57	1.35	105	0.95	52	*0.90	47	*1.20	82
26,	*1.60	152	3.42	920	2.70	487	2.42	372	1.31	99	0.92	49	1.30	97	1.10	68	1.25	90	0.90	47	*0.95	52	1.20	82
27,	*1.65	162	*3.10	710	2.58	434	2.40	365	1.46	124	1.02	59	1.18	79	1.00	57	1.20	82	0.95	52	1.00	57	1.18	79
28,	*1.65	162	*2.95	620	2.40	365	2.40	365	1.41	115	1.02	59	1.10	68	1.20	82	1.20	82	0.75	34	*1.10	68	1.20	82
29,	*1.65	162	------	------	2.17	293	2.92	602	1.31	99	1.02	59	1.10	68	1.10	68	1.05	62	1.00	57	1.20	82	0.98	55
30,	*1.65	162	------	------	2.10	273	3.56	1028	1.16	76	1.12	71	1.10	68	1.10	68	*1.00	57	0.95	52	0.87	45	1.05	62
31	*1.60	152	------	------	2.00	246	------	------	0.95	52	------	------	1.20	82	1.00	57	------	------	*0.98	55	------	------	1.10	68

*Interpolated. †Maximum 4.62 at 5 p. m.=1888 sec. ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF McMICHAELS CREEK, AT STROUDSBURG, MONROE COUNTY, PA.

1910.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	*1.08	66	2.53	414	4.70	1960	2.18	296	*3.12	722	2.20	302	1.40	113
2,	*1.05	62	2.51	406	4.80	2050	2.20	302	3.05	680	2.10	273	1.35	105
3,	1.50	132	2.62	451	4.10	1440	*2.21	305	3.00	650	1.95	233	*1.36	107
4,	1.42	117	2.60	442	3.75	1168	2.22	308	2.85	563	1.76	187	1.38	110
5,	1.41	115	2.75	512	3.58	1044	2.20	302	2.82	547	*1.72	178	1.35	105
6,	1.40	113	*2.72	497	*3.49	972	2.25	317	*2.81	541	1.69	171	1.32	100
7,	1.70	173	2.70	487	3.40	905	1.70	173	2.80	536	1.70	173	1.40	113
8,	1.89	218	2.85	563	3.23	790	1.80	196	*2.70	487	1.72	178	1.41	115
9,	*1.72	178	2.83	552	3.08	698	1.82	201	2.60	442	1.65	162	1.40	113
10,	1.55	142	2.80	536	2.93	608	*1.81	198	2.40	365	1.70	173	*1.40	113
11,	1.58	148	2.82	547	2.79	531	1.80	196	2.45	382	*1.73	180	*1.40	113
12,	1.48	128	2.70	487	2.67	473	1.76	187	2.50	402	*1.76	187	1.40	113
13,	1.51	134	*2.40	365	*2.61	446	1.75	184	2.30	332	1.80	196	1.52	136
14,	1.56	144	2.00	246	2.55	422	1.90	220	2.40	365	1.78	191	1.45	122
15,	1.59	150	1.72	178	2.48	395	1.85	208	*2.38	358	1.80	196	1.45	122
16,	*1.56	144	1.58	148	2.48	395	2.20	302	*2.36	352	2.20	302	1.40	113
17,	1.54	140	1.70	173	2.20	302	*3.60	1050	*2.34	345	1.65	162		
18,	1.52	136	1.65	162	2.00	246	5.05	2288	*2.32	339	1.60	152		
19,	1.54	140	1.68	169	2.05	260	4.00	1360	*2.30	332	*1.56	144		
20,	1.57	146	*2.00	246	*2.08	268	3.00	650	*2.28	326	*1.53	138		
21,	2.10	273	3.20	770	2.10	273	2.84	558	*2.26	320	1.50	132		
22,	5.85	3070	4.40	1690	2.50	402	2.80	536	*2.23	311	1.38	110		
23,	*4.50	1780	3.20	770	2.20	302	2.50	402	2.20	302	1.40	113		
24,	3.00	650	3.00	650	2.20	302	*2.65	464	2.15	288	1.45	122		
25,	2.90	590	2.80	536	2.18	296	5.85	3070	2.10	273	1.80	196		
26,	2.88	579	2.20	302	2.15	288	6.00	3220	2.02	251	*1.70	173		
27,	2.85	563	2.90	590	*2.18	296	5.20	2430	2.00	246	1.60	152		
28,	2.81	541	3.60	1050	2.20	302	3.50	980	1.87	213	1.62	156		
29,	2.62	451			2.30	332	3.40	905	*1.88	215	1.50	132		
30,	*2.56	426			2.28	326	3.20	770	*1.89	217	1.41	115		
31,	2.50	402			2.20	302			1.90	220				

*Interpolated.

ESTIMATED MONTHLY DISCHARGE, McMICHAELS CREEK, AT STROUDSBURG, MONROE COUNTY,

(Drainage area 105 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1908.					
October,	335	53	108	1.025	1.181
November,	144	35	71	0.680	0.759
December,	107	35	84	0.800	0.922
1909.					
January,	1090	90	222	2.114	2.437
February,	2820	162	706	6.724	7.002
March,	1888	233	371	3.533	4.073
April,	1028	132	398	3.795	4.234
May,	988	52	279	2.657	3.063
June,	140	29	609	.580	.647
July,	225	40	76	.724	.835
August,	132	31	68	.645	.744
September,	154	45	76	.724	.807
October,	62	29	48	.457	.527
November,	132	39	56	.537	.599
December,	442	45	106	1.010	1.164
The year,	2820	29	251	1.958	26.132
1910.					
January,	3070	62	389	3.705	4.272
February,	1690	148	498	4.743	4.939
March,	2050	246	606	5.771	6.653
April,	3220	184	753	7.171	8.001
May,	722	213	385	3.663	4.223
June,	302	110	176	1.676	1.870

McMICHAELS CREEK AT CAR SHOPS ABOVE STROUDSBURG.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania on August 3, 1911, on the railroad bridge of the Wilkes-Barre and Eastern Railroad near the car shops above Stroudsburg, and is being maintained by Meikleham & Dinsmore, Engineers, New York City. A chain gage is fastened on the second panel of the left downstream side of the bridge. The length of chain from center of rivet to bottom of weight is 23.00 feet, the elevation of zero being arbitrary datum. A bench mark was established on the main chord of the bridge directly above pulley on gage, at a chiseled T mark, elevation 25.79 feet above zero of gage.

Discharge measurements are made from the downstream side of bridge, and by wading below the bridge at low stages. The channel at the bridge is straight, with stone and mud bottom, and with high banks on either side which do not overflow. The channel passes under the bridge at a slight angle. This gage is read twice daily by Robert H. Ace.

Since the establishment of this station, four discharge measurements have been made. Owing to the insufficient number of discharge measurements, no rating curve has been computed at this station, and only the discharge measurements and daily gage heights are published.

DISCHARGE MEASUREMENTS, McMICHAELS CREEK, AT CAR SHOPS, STROUDSBURG, MONROE COUNTY, PA.

(Drainage area 60 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1911.							
1	Aug. 14,	Cornell,	72	63	1.02	3.14	64	Wading msmt.
2	Oct. 3,	do	75	94	1.78	3.72	168	do
3	Oct. 19,	do	75	124	2.66	4.22	329	do
4	Oct. 23,	do	82	320	2.43	5.10	777	From bridge.

MEAN DAILY GAGE HEIGHT, IN FEET, OF McMICHAELS CREEK, AT CAR SHOPS, STROUDSBURG, MONROE COUNTY, PA.

1911. DAY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1,	----------	4.61	3.36	3.69	3.61
2,	----------	4.24	4.06	3.61	3.60
3,	----------	3.88	3.68	3.55	3.56
4,	----------	3.72	3.59	3.53	3.62
5,	----------	3.64	3.53	3.50	3.58
6,	----------	4.12	3.40	3.60	*3.58
7,	----------	3.62	3.62	3.84	*3.56
8,	----------	3.56	3.40	3.56	*3.56
9,	----------	3.55	3.34	3.58	*3.54
10,	3.18	3.52	3.32	3.50	3.54
11,	3.14	3.48	3.39	3.46	3.46
12,	3.08	3.48	3.35	3.47	3.44
13,	3.09	3.41	3.32	3.61	3.44
14,	3.12	3.35	3.30	3.45	3.38
15,	3.08	3.36	3.32	3.52	3.62
16,	3.08	3.42	3.35	3.56	3.94
17,	3.06	3.37	3.27	3.48	3.80
18,	3.07	3.30	b4.81	c4.42	3.72
19,	3.12	3.29	4.22	3.99	3.68
20,	3.04	3.28	4.08	3.92	3.65
21,	3.03	3.22	4.30	3.88	3.62
22,	3.02	3.40	4.16	3.80	3.72
23,	3.00	3.39	4.87	3.64	4.41
24,	3.03	3.34	4.47	3.88	3.84
25,	3.14	3.26	4.26	3.76	3.76
26,	3.17	3.24	4.10	3.64	3.77
27,	3.22	3.19	3.99	3.61	4.17
28,	3.17	3.18	3.88	3.60	3.80
29,	4.60	3.51	3.78	3.86	3.92
30,	4.06	3.38	3.75	3.64	3.71
31,	a5.26	----------	3.70	----------	3.75

aMax. 5.61′ at 4.24 p. m.
bMax. 5.56′ at 4.40 p. m.
cMax. 4.6′ at 4.38 p. m.
*Interpolated. Chain broken.

LEHIGH RIVER.

DESCRIPTION OF BASIN.

The Lehigh river, the second largest tributary of the Delaware river from Pennsylvania, drains approximately 1,375 square miles, in the central-eastern portion of the State. Rising in the Pocono plateau in the southwest corner of Wayne county, it follows a winding course, generally southeasterly to its mouth at Easton, its length being approximately 100 miles, while the air line distance from its source to its mouth is only 45 miles.

The sources of the upper tributaries lie among the Pocono hills, which are sparsely inhabited, and largely forested. The slope of the river is steep, with numerous rapids, water falls, and glacial lakes. The stream falls about 10 feet per mile until within 15 or 20 miles of the mouth, where it enters the rolling farm lands of Lehigh and Northampton counties, where its slope reduces to 4 or 5 feet per mile. In this portion of the valley is much cultivated land and numerous large cities and boroughs, among the most important being Allentown, South Bethlehem, Bethlehem, and Easton.

Numerous of its lower tributaries, among them the Little Lehigh, Jordan, Monocacy and Saucon creeks, drain limestone areas, thus augmenting the dry weather flow. From the west, where the Lehigh passes the anthracite coal fields, the tributaries bring in quantities of culm and mine water.

The chief tributaries are Tobyhanna, Bear, Black, Mahoning, Big, Lizard, Aquauchicola, Jordan, Little Lehigh, Monocacy and Saucon creeks.

The banks, especially in the upper portion, are high and rocky, and below Mauch Chunk and White Haven the valley assumes the nature of a gorge. The bed is rock throughout most of its length, in places overlain by a thin layer of drift, and in its lower section, behind the navigation dams, extensive silting has taken place.

The Lehigh Coal and Navigation Company operates a canal and slackwater system of navigation on the lower 45 miles, consisting of 10 dams and locks, and several short sections of canal connecting the pools. Considerable water power is developed along this canal.

Numerous towns and industries in the lower section, in which portion of the valley population and industries are quite congested, use the river water for domestic and industrial purposes, but its impure condition and high sediment content, make purification a requisite.

The basin, which is long and narrow, is subject to an annual average precipitation of 45 to 50 inches.

The flow has been measured from September 22, 1902, to February 13, 1905, and from April 26, 1909, to date, at South Bethlehem, 12 miles above the mouth.

DELAWARE BASIN—STATION NO. 13.

LEHIGH RIVER AT SOUTH BETHLEHEM.

DESCRIPTION OF STATION.

This station was established by the United States Geological Survey, September 22nd, 1902, on the New street bridge, connecting Bethlehem and South Bethlehem, and was operated until February 13th, 1905, by Lehigh University. On that date it was discontinued, and was re-established by the Water Supply Commission of Pennsylvania, at the same point, on April 26th, 1909. The present equipment consists of a standard chain and weight gage, similar to that previously employed, the new datum being 0.09 feet higher than the old. The elevation of the zero of the present gage is 210.64 feet above mean tide, referred to the following bench marks: Bench Mark No. 1—Shelf in fourth course from bottom on right hand downstream corner, third pier from left bank, elevation 223.55 feet above sea level, or 12.91 feet above zero of gage. Bench Mark No. 2 is No. 72 of L. V. R. R., on iron pin set in south pier of New street bridge at elevation 232.87 feet above sea level, or 22.23 feet above zero of gage. The length of chain is 43.05 feet to low water marker and 33.05 feet to high water marker.

Discharge measurements are made from the downstream side of the bridge, the initial point for soundings being a point on hand-rail over center of pier, between third and fourth trusses from left bank. The channel is straight both above and below the station and the bed is of sand and gravel. The right bank is high and does not overflow, while the left is low and subject to overflow at high stages. The Lehigh canal follows the left bank and passes over Monocacy creek, and under left span of bridge. Monocacy creek passes under canal on left bank, and under bridge, entering the river a short distance below. Canal is measured at Main street bridge, one-third of a mile above, the discharge reduced by tail race flow of ice plant and grist mill, which use canal water between two bridges, is added to river discharge as measured at New street bridge. There is a spillway from the canal into the creek at the aqueduct, so that the canal cannot be measured at New street bridge. The gage is read twice daily by J. E. Santee, the toll collector at the bridge.

Since the establishment of this station 42 discharge measurements have been made, by the United States Geological Survey, Lehigh University and the Water Supply Commission of Pennsylvania.

The rating tables below have been compiled by the United States Geological Survey, as well as all the data from 1902 to 1905 inclusive. Three rating tables have been computed, made necessary by certain changes in the river channel.

DISCHARGE MEASUREMENTS, LEHIGH RIVER, AT SOUTH BETHLEHEM, NORTHAMPTON COUNTY, PA.

(Drainage area 1,235 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1902.							
1	Sept. 22,	Paul,	340	787	1.49	2.22	1171	
2	Nov. 14,	Rice,	------	879	1.78	2.7	1696	
3	Nov. 20,	Rice,	------	880	1.62	2.5	1436	
	1903.							
4	June 26,	Hoyt,	308	1160	2.14	3.41	2480	
5	Aug. 3,	Hoyt,	287	969	1.63	2.78	1583	
6	Oct. 12,	Sawyer,	363	2180	4.84	6.46	10536	
	1904.							
7	July 21,	Taylor,	279	760	1.10	2.20	838	
8	Nov. 7,	Comstock,	293	923	1.38	2.60	1276	
	1908.							
9	Feb. 17,	Bolster,	339	1940	4.15	5.48	8050	Add 15 sec. feet for canal.
10	Sept. 14,	Grant,	268	674	0.68	1.92	456	Add 38 sec. ft. for canal.
	1909.							
11	Mar. 26,	Grant,	330	1739	3.49	5.29	6059	Add 33 sec. feet for canal.
12	April 17,	Conkling,	334	1920	3.11	4.66	5980	Add 47 sec. feet for canal.
13	April 21,	Grant,	331	1518	2.84	4.54	4304	Add 43 sec. feet for canal.
14	April 24,	Greenough,	------	--------	------	4.85	5708	
15	May 1,	Conkling,	333	2147	4.21	6.25	9054	Add 43 sec. feet for canal.
16	May 2,	Conkling,	333	2296	4.36	6.68	10007	Add 60 sec. feet for canal.
17	May 2,	Conkling,	333	2244	4.30	6.60	9669	Add 67 sec. feet for canal.
18	May 3,	Conkling,	331	2084	3.91	6.03	8154	Add 33 sec. feet for canal.
19	May 3,	Conkling,	333	2058	3.82	5.90	7855	Add 33 sec. feet for canal.
20	May 15,	Ryder,	320	1219	2.14	3.60	2606	Add 30 sec. feet for canal.
21	June 29,	Grant,	285	876	1.16	2.56	1019	Add 36 sec. feet for canal.
22	Sept. 29,	Poole,	277	693	0.71	1.87	494	
23	Oct. 2,	Poole,	278	675	0.61	1.80	414	
24	Oct. 6,	Poole,	278	674	0.57	1.80	384	
25	Oct. 13,	Poole,	282	752	0.88	2.13	666	
26	Nov. 18,	Poole,	273	660	0.54	1.78	359	
27	Dec. 15,	Poole,	330	1318	2.54	3.96	3353	
28	Dec. 16,	Poole,	------	--------	------	3.69	1675	
29	Dec. 17,	Poole,	------	--------	------	3.09	1419	

DISCHARGE MEASUREMENTS, LEHIGH RIVER, AT SOUTH BETHLEHEM, NORTHAMPTON COUNTY, PA.

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1910.							
30	Jan. 5,	Poole, ...	286	796	0.96	2.23	768	
31	Jan. 22,	Poole, ...	352	4523	6.76	13.28	30586	
32	Feb. 21,	Poole, ...	338	1521	2.82	4.48	4293	
33	Feb. 23,	Poole, ...	341	1907	3.54	5.68	6745	
34	Mar. 1,	Poole, ...	345	2908	4.80	8.58	14209	
35	April 18,	Poole, ...	340	1908	3.70	5.64	7056	
36	April 25,	Poole, ...	348	2835	3.97	7.38	11261	
37	April 25,	Poole, ...	348	2675	4.80	7.89	12843	
38	April 27,	Poole, ...	347	2219	4.19	6.58	9308	
39	Oct. 31,	Reussner, ...	272	678	0.63	1.65	426	
	1911.							
40	Jan. 14,	Reussner, ...	312	1355	2.75	4.17	3732	
41	Mar. 22,	Reussner, ...	306	1028	1.75	3.01	1801	
42	Nov. 25,	Ryder, ...	210	1257	2.45	3.73	3085	

DISCHARGE TABLE FOR LEHIGH RIVER AT SOUTH BETHLEHEM, NORTHAMPTON COUNTY, FROM SEPTEMBER 22, 1902, to DECEMBER 2, 1902.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.70	615	.80	1900	.90	3860	5.00	6390	.20	12100
.80	700	.90	2050	4.00	4070	.20	6880	.40	12660
.90	790	3.00	2210	.10	4290	.40	7380	.60	13220
2.00	885	.10	2370	.20	4510	.60	7880	.80	13780
.10	985	.20	2540	.30	4740	.80	8380	8.00	14360
.20	1100	.30	2710	.40	4970	6.00	8900	.20	14940
.30	1220	.40	2890	.50	5200	.20	9420	.40	15520
.40	1340	.50	3070	.60	5430	.40	9940		
.50	1470	.60	3260	.70	5670	.60	10470		
.60	1610	.70	3450	.80	5910	.80	11010		
.70	1750	.80	3650	.90	6150	7.00	11550		

NOTE.—The above table is not applicable for ice or obstructed channel conditions. It is based on 3 discharge measurements made during 1902, and the form of the later curves, and is well defined between gage heights 2.2 feet and 2.8 feet.

DISCHARGE TABLE FOR LEHIGH RIVER, AT SOUTH BETHLEHEM, NORTHAMPTON COUNTY, FROM DECEMBER 3, 1902, TO FEBRUARY 13, 1905.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.70	410	.80	1550	.90	3370	5.00	5670	.20	11280
.80	485	.90	1690	4.00	3560	.20	6150	.40	11820
.90	560	3.00	1840	.10	3750	.40	6630	.60	12380
2.00	640	.10	1990	.20	3950	.60	7130	.80	12940
.10	730	.20	2140	.30	4150	.80	7630	8.00	13500
.20	830	.30	2300	.40	4350	6.00	8130	9.00	16420
.30	930	.40	2470	.50	4560	.20	8640	10.00	19490
.40	1040	.50	2640	.60	4770	.40	9160	11.00	22730
.50	1160	.60	2820	.70	4990	.60	9680	12.00	26130
.60	1280	.70	3000	.80	5210	.80	10200		
.70	1410	.80	3180	.90	5440	7.00	10740		

NOTE.—The above table is not applicable for ice or obstructed channel conditions. It is based on 4 discharge measurements made during 1903-4, and the forms of later curves, and is well defined between gage heights 2.1 feet and 3.5 feet, and fairly well above gage height 3.5 feet.

DISCHARGE TABLE FOR LEHIGH RIVER, AT SOUTH BETHLEHEM, NORTHAMPTON COUNTY, FROM APRIL 26, 1909.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.40	150	.10	1775	.80	4970	.50	9160	10.00	19180
.50	205	.20	1920	.90	5200	.60	9420	11.00	22400
.60	260	.30	2075	5.00	5430	.70	9680	12.00	25780
.70	320	.40	2235	.10	5670	.80	9940	13.00	29330
.80	385	.50	2400	.20	5910	.90	10205	14.00	33040
.90	455	.60	2570	.30	6150	7.00	10470	15.00	36890
2.00	530	.70	2745	.40	6390	.10	10740	16.00	40860
.10	615	.80	2925	.50	6635	.20	11010	17.00	44950
.20	705	.90	3105	.60	6880	.30	11280	18.00	49150
.30	800	4.00	3290	.70	7130	.40	11550	19.00	53450
.40	900	.10	3480	.80	7380	.50	11825	20.00	57850
.50	1010	.20	3680	.90	7630	.60	12100	21.00	62350
.60	1125	.30	3880	6.00	7880	.70	12380	22.00	66950
.70	1245	.40	4090	.10	8130	.80	12660		
.80	1370	.50	4300	.20	8380	.90	12940		
.90	1500	.60	4520	.30	8640	8.00	13220		
3.00	1635	.70	4740	.40	8900	9.00	16120		

NOTE.—The above table is not applicable for ice or obstructed channel conditions. It is based on discharge measurements made during 1908-1910, and subsequently, and is well defined below gage height 15 feet.

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DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LEHIGH RIVER, AT SOUTH BETHLEHEM, NORTHAMPTON COUNTY, PENNA.

1902.	SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	6.00	8900	3.65	3360	2.50	1470
2,	------	------	6.00	8900	3.55	3160	2.50	1470
3,	------	------	5.20	6880	3.40	2890	2.80	1550
4,	------	------	4.65	5550	3.30	2710	2.90	1690
5,	------	------	4.55	5320	3.20	2540	2.90	1690
6,	------	------	5.45	7500	3.30	2710	2.90	1690
7,	------	------	4.95	6270	3.25	2620	2.90	1690
8,	------	------	4.50	5200	3.10	2370	2.90	1690
9,	------	------	4.30	4740	2.95	2130	2.45	1100
10,	------	------	3.90	3860	2.85	1980	2.45	1100
11,	------	------	3.65	3360	2.80	1900	2.50	1160
12,	------	------	5.57	7800	2.75	1820	2.60	1280
13,	------	------	5.75	8260	2.70	1750	2.65	1340
14,	------	------	4.95	6270	2.70	1750	2.70	1410
15,	------	------	4.45	5080	2.70	1750	2.70	1410
16,	------	------	4.15	4400	2.65	1680	4.30	4150
17,	------	------	3.85	3760	2.65	1680	8.60	15200
18,	------	------	3.70	3450	2.55	1540	5.90	7880
19,	------	------	3.65	3360	2.55	1540	5.00	5670
20	------	------	3.55	3160	2.50	1470	4.50	4560
21,	------	------	3.30	2710	2.50	1470	4.80	5210
22.	2.20	1100	3.15	2460	2.50	1470	12.20	26800
23,	2.10	985	3.10	2370	2.50	1470	8.25	14200
24,	2.07	955	2.95	2130	2.50	1470	6.35	9030
25,	2.70	1750	2.90	2050	2.50	1470	5.55	7000
26,	8.35	15400	2.90	2050	2.50	1470	5.00	5670
27,	8.00	14400	2.85	1980	2.50	1470	4.60	4770
28.	6.10	9160	5.15	6760	2.50	1470	4.20	3950
29,	5.75	8260	4.80	5910	2.50	1470	4.00	3560
30,	5.60	7880	4.30	4740	2.50	1470	3.90	3370
31,	------	------	3.90	3860	------	------	3.80	3180

Canal closed during 1902 on account of flood during that year.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LEHIGH RIVER, AT SOUTH BETHLEHEM, NORTHAMPTON COUNTY, PA.

1903.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.50	2640	4.40	4350	10.20	20100	4.20	3950	3.00	1840	2.20	875	3.30	2340	3.90	3420	3.40	2520	2.40	1080	2.60	1280	2.40	1040
2,	3.40	2470	4.30	4150	7.00	10700	3.90	3370	2.90	1690	2.10	775	3.00	1880	3.90	3420	3.20	2180	2.30	975	2.60	1280	2.30	930
3,	5.25	6270	4.10	3750	5.60	7130	3.90	3370	2.90	1690	2.10	775	2.90	1740	3.80	3220	3.10	2040	2.30	975	2.60	1280	2.30	930
4,	4.72	5030	5.00	5670	4.90	5440	3.90	3370	2.90	1690	2.00	685	2.80	1600	3.70	3040	2.90	1740	2.30	975	2.50	1160	2.30	930
5,	4.40	4350	5.00	5670	4.60	4770	3.70	3000	2.90	1690	2.00	685	2.70	1400	4.10	3800	2.80	1600	2.30	975	2.60	1280	2.40	1040
6,	4.15	3850	5.00	5670	4.40	4350	3.60	2820	2.80	1550	1.90	605	2.70	1460	3.90	3420	2.70	1460	2.30	975	2.60	1280	2.40	1040
7,	3.90	3370	4.90	5440	4.20	3950	3.60	2820	2.80	1550	1.90	605	2.70	1460	4.60	4820	2.70	1460	2.30	975	2.50	1160	2.40	1040
8,	3.80	3180	4.70	4990	4.20	3950	4.40	4350	2.70	1410	2.30	975	2.70	1460	4.40	4400	2.60	1320	2.30	975	2.50	1160	2.40	1040
9,	3.35	2380	4.40	4350	4.80	5210	6.10	8380	2.70	1410	2.70	1460	2.60	1320	3.90	3420	2.60	1320	5.60	7180	2.50	1160	2.40	1040
10,	3.20	2140	3.80	3180	4.60	4770	5.60	7130	2.60	1280	2.60	1320	2.60	1320	3.40	2520	2.70	1460	11.90	25800	2.50	1160	2.30	930
11,	3.10	1990	3.80	3180	4.60	4770	4.90	5440	2.60	1280	2.40	1080	2.50	1200	3.30	2340	2.70	1460	7.90	13300	2.50	1160	2.30	930
12,	3.05	1920	5.00	5670	4.40	4350	4.80	5210	2.60	1280	4.00	3600	2.50	1200	3.10	2040	2.70	1460	6.10	8380	2.50	1160	2.30	930
13,	2.90	1690	4.70	4990	4.20	3950	4.70	4990	2.50	1160	4.20	4000	2.50	1200	3.00	1880	2.60	1320	5.30	6390	2.40	1040	2.50	1160
14,	3.05	1920	4.40	4350	4.00	3560	5.40	6630	2.50	1160	3.70	3040	2.40	1080	2.90	1740	2.60	1320	4.80	5210	2.40	1040	3.10	1990
15,	3.20	2140	4.10	3750	3.80	3180	6.40	9160	2.40	1040	3.60	2860	2.40	1080	2.90	1740	3.70	3040	4.40	4350	2.40	1040	2.50	1160
16,	3.30	2300	4.20	3950	3.80	3180	5.90	7830	2.40	1040	3.30	2340	2.30	975	2.90	1740	3.70	3040	3.80	3180	2.30	930	2.50	1160
17,	3.20	2140	3.40	2470	3.70	3000	5.50	6880	2.50	1160	3.10	2040	2.30	975	2.90	1740	3.30	2340	3.80	3180	2.50	1160	2.60	1280
18,	3.05	1920	3.30	2300	3.60	2820	4.90	5440	2.40	1040	3.10	2040	2.50	1200	2.90	1740	3.00	1880	3.90	3370	3.80	3180	2.50	1160
19,	3.00	1840	3.30	2300	2.40	1040	4.40	4350	2.40	1040	3.00	1880	3.90	3420	2.80	1600	2.90	1740	3.90	3370	3.20	2140	2.30	930
20,	2.70	1410	3.40	2470	2.40	1040	4.30	4150	2.40	1040	2.90	1740	3.80	3220	2.70	1460	2.70	1460	3.70	3000	3.00	1840	4.40	4350
21,	4.70	4990	3.40	2470	2.40	1040	4.00	3560	2.40	1080	3.40	2520	3.50	2680	2.70	1460	2.70	1460	3.50	2640	2.80	1550	6.10	8380
22,	4.80	5210	3.40	2470	4.90	5440	3.80	3180	2.30	975	3.20	2180	3.30	2340	2.60	1320	2.60	1320	3.40	2470	2.90	1690	4.50	4560
23,	4.00	3560	3.40	2470	6.00	8130	3.70	3000	2.30	975	3.40	2520	3.20	2180	2.60	1320	2.50	1200	3.30	2300	2.90	1690	4.05	3660
24,	3.40	2470	3.40	2470	9.20	17000	3.60	2820	2.30	975	3.90	3420	3.20	2180	2.50	1200	2.40	1080	3.20	2140	2.70	1410	3.60	2820
25,	3.15	2060	3.30	2300	6.80	10200	3.50	2640	2.30	975	3.60	2860	3.40	2520	2.50	1200	2.40	1080	3.10	1990	2.70	1410	3.50	2640
26,	3.30	2300	3.30	2300	5.80	7630	3.40	2470	2.20	875	3.40	2520	3.50	2680	2.40	1080	2.40	1080	3.00	1840	2.50	1160	3.40	2470
27,	3.20	2140	3.20	2140	5.10	5910	3.30	2300	2.20	875	3.20	2180	3.50	2680	2.40	1080	2.30	975	2.90	1690	2.40	1040	3.30	2300
28,	3.30	2300	9.30	17300	4.60	4770	3.30	2300	2.20	875	3.00	1880	3.50	2680	2.40	1080	2.40	1080	2.80	1550	2.20	830	3.20	2140
29,	4.30	4150	------	------	4.20	3950	3.20	2140	2.20	875	3.60	2860	3.50	2680	3.30	2340	2.40	1080	2.70	1410	2.40	1040	2.60	1280
30,	4.20	3950	------	------	3.90	3370	3.10	1900	2.10	775	3.30	2340	3.70	3040	3.10	2040	2.40	1080	2.60	1280	2.50	1160	2.60	1280
31,	4.50	4560	------	------	4.50	4560	------	------	2.10	775	------	------	4.10	3800	3.80	3220	------	------	2.60	1280	------	------	2.70	1410

Canal in operation May 21 to Oct. 11, 1903, during which period 45 sec. ft. was added to the daily discharge.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LEHIGH RIVER, AT SOUTH BETHLEHEM, NORTHAMPTON COUNTY, PA.

1904.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.70	1410	2.90	1690	3.20	2140	6.50	9420	2.90	1690	2.70	1410	2.50	1160	2.40	1080	2.10	775	2.30	975	2.70	1460	2.70	1410
2,	2.70	1410	2.70	1410	3.30	2300	6.65	9810	2.90	1690	2.70	1410	2.40	1040	2.30	975	2.10	775	2.20	875	2.70	1460	2.60	1280
3,	2.40	1040	2.70	1410	3.90	3370	5.60	7130	2.80	1550	2.90	1690	2.30	930	2.50	1200	2.20	875	2.20	875	2.70	1460	2.50	1160
4,	2.80	1550	2.60	1280	4.42	4390	4.60	4770	2.70	1410	2.60	1280	2.20	830	2.60	1320	2.00	685	2.20	875	2.60	1320	2.40	1040
5.	2.60	1280	2.70	1410	3.40	2470	4.40	4350	2.70	1410	3.10	1990	2.10	730	2.50	1200	2.10	775	2.20	875	2.60	1320	2.40	1040
6,	2.60	1280	2.80	1550	3.40	2470	4.20	3950	2.60	1280	3.10	1990	2.00	640	2.40	1080	2.00	685	2.20	875	2.60	1320	2.50	1160
7,	2.60	1280	2.80	1550	10.15	20000	4.20	3950	2.50	1160	3.00	1840	2.50	1160	2.20	875	2.10	775	2.20	875	2.60	1320	2.50	1160
8,	2.70	1410	4.00	3560	9.05	16600	4.20	3950	2.50	1160	2.90	1690	3.85	3280	2.30	975	2.00	685	2.20	875	2.50	1200	2.50	1160
9,	2.60	1280	3.80	3180	6.50	9420	4.30	4150	2.50	1160	3.00	1840	3.00	1840	2.30	975	2.00	685	2.20	875	2.50	1200	2.40	1040
10,	2.50	1160	3.40	2470	5.70	7380	4.20	3950	2.50	1160	3.80	3180	3.00	1840	2.30	975	2.30	975	2.20	875	2.50	1200	2.40	1040
11,	2.50	1160	3.00	1840	5.20	6150	3.90	3370	2.60	1280	------	3120	2.80	1550	2.90	1740	2.10	775	2.20	875	2.50	1200	2.40	1040
12.	2.60	1280	2.90	1690	4.50	4560	3.80	3180	2.50	1160	------	3060	2.60	1320	2.50	1200	2.00	685	2.40	1080	2.50	1200	2.40	1040
13,	2.70	1410	2.80	1550	4.20	3950	3.70	3000	2.30	930	3.70	3000	2.60	1320	2.30	975	2.00	685	2.60	1320	2.50	1200	2.40	1040
14,	2.70	1410	2.70	1410	4.00	3560	3.60	2820	2.30	930	------	2420	2.45	1140	2.30	975	2.25	925	2.60	1320	3.10	2040	2.30	930
15,	2.60	1280	2.70	1410	3.90	3370	3.40	2470	------	1310	3.00	1840	2.20	875	2.40	1080	3.40	2520	2.60	1320	3.10	2040	2.40	1040
16,	2.50	1160	2.70	1410	3.80	3180	3.30	2300	2.90	1690	2.90	1690	2.15	825	2.30	975	3.60	2860	2.50	1200	3.00	1880	2.40	1040
17,	2.40	1040	2.60	1280	3.60	2820	3.20	2140	2.70	1410	2.80	1550	2.10	775	2.20	875	3.10	2040	2.50	1200	2.80	1600	2.30	930
18,	2.30	930	2.60	1280	3.60	2820	3.10	1990	2.60	1280	2.60	1280	2.30	975	2.20	875	2.70	1460	2.40	1080	2.70	1460	2.30	930
19,	2.30	930	2.50	1160	3.50	2640	3.00	1840	2.60	1280	2.50	1160	2.60	1320	2.10	775	2.70	1460	2.30	975	2.70	1460	2.40	1040
20	2.60	1280	2.50	1160	4.20	3950	3.00	1840	2.60	1280	2.40	1040	2.50	1200	2.30	975	2.60	1320	2.30	975	2.60	1320	2.40	1040
21,	2.30	930	2.50	1160	4.20	3950	3.00	1840	2.50	1160	2.40	1040	2.10	775	3.05	1960	2.50	1200	2.40	1080	3.10	2040	2.40	1040
22,	2.70	1410	6.43	9240	4.10	3750	3.00	1840	2.50	1160	2.40	1040	2.10	775	2.80	1600	2.50	1200	6.20	8680	3.00	1880	2.20	830
23,	6.30	8900	4.55	4660	4.20	3950	2.90	1690	2.40	1040	2.40	1040	2.00	685	2.90	1740	2.40	1080	4.60	4820	3.00	1880	2.30	930
24,	5.30	6390	4.20	3950	4.30	4150	2.90	1690	2.40	1040	2.30	930	2.20	875	2.70	1460	2.40	1080	4.00	3600	2.90	1740	2.50	1160
25,	4.05	3660	4.00	3560	4.60	4770	2.80	1550	2.40	1040	2.30	930	2.30	975	2.50	1200	2.20	875	3.70	3040	2.80	1600	2.50	1160
26,	3.70	3000	3.20	2140	5.20	6150	2.80	1550	2.50	1160	2.30	930	2.50	1200	2.40	1080	2.20	875	3.50	2680	2.70	1460	2.70	1410
27,	3.60	2820	3.15	2060	5.00	5670	2.90	1690	2.60	1280	2.20	830	3.50	2680	2.30	975	2.20	875	3.30	2340	2.70	1460	2.60	1280
28,	3.20	2140	3.00	1840	4.80	5210	3.10	1990	2.50	1160	2.10	730	3.10	2040	2.20	875	2.20	875	3.10	2040	2.70	1460	3.40	2470
29,	3.20	2140	3.20	2140	4.20	3950	3.10	1990	2.30	930	2.25	880	2.90	1740	2.20	875	2.20	875	3.00	1880	2.70	1410	4.30	4150
30,	3.10	1990	------	------	4.00	3560	3.00	1840	2.30	930	2.50	1160	2.70	1460	2.20	875	2.40	1080	2.90	1740	2.70	1410	3.50	2640
31,	3.00	1840	------	------	4.00	3560	------	------	2.70	1410	------	------	2.50	1200	2.10	775	------	------	2.80	1600	------	------	3.30	2300

Canal in operation July 12 to Nov. 28, 1904, during which period 45 sec. ft. was added to the daily discharge. Daily discharge interpolated when gage was not read.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LEHIGH RIVER, AT SOUTH BETHLEHEM, NORTHAMPTON COUNTY, PENNA.

1905.	JAN.		FEB.	
DAY.	G H	Dis.	G H	Dis.
1,	3.4	2470	2.8	1550
2,	3.4	2470	2.7	1410
3,	3.4	2470	2.6	1280
4,	3.4	2470	2.6	1280
5,	3.3	2300	2.6	1280
6,	3.3	2300	2.6	1280
7,	10.15	20000	2.6	1280
8,	7.9	13220	2.6	1280
9,	5.9	7880	2.6	1280
10,	5.4	6630	2.6	1280
11,	4.6	4770	2.6	1280
12,	4.5	4560	2.6	1280
13,	4.3	4150	2.6	1280
14,	4.1	3750		
15,	3.8	3180		
16,	3.7	3000		
17,	3.6	2820		
18,	3.6	2820		
19,	3.5	2640		
20,	3.5	2640		
21,	3.5	2640		
22,	3.3	2300		
23,	3.2	2140		
24,	3.0	1840		
25,	2.8	1550		
26,	2.4	1040		
27,	3.3	2300		
28,	3.1	1990		
29,	3.0	1840		
30,	2.9	1690		
31,	2.9	1690		

Discontinued Feb. 13, 1905.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LEHIGH RIVER, AT SOUTH BETHLEHEM, NORTHAMPTON COUNTY, PA.

1909.	APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	6.18	8380	2.69	1280	2.48	1030	1.98	560	1.70	365	1.78	417	1.82	444	1.90	500
2,	------	------	6.63	9540	2.59	1160	2.36	905	2.08	643	1.75	398	1.70	365	1.72	378	1.88	486
3,	------	------	5.98	7880	2.75	1350	2.24	788	2.05	618	1.63	323	1.66	341	1.74	391	1.87	479
4,	------	------	5.68	7120	2.65	1230	2.22	769	2.02	592	1.53	266	1.78	417	1.78	417	1.86	472
5,	------	------	5.24	6050	2.78	1390	2.27	816	1.94	530	1.76	404	1.74	391	1.72	378	1.84	458
6,	------	------	4.85	5130	3.03	1720	2.26	809	1.86	472	1.74	391	1.65	335	1.74	391	1.92	515
7,	------	------	4.54	4430	3.17	1920	2.21	760	1.86	472	1.76	404	1.74	391	1.60	305	1.84	458
8,	------	------	4.37	4070	2.92	1570	2.24	788	1.91	508	1.59	300	1.70	365	1.80	430	1.87	479
9,	------	------	4.10	3520	2.85	1480	2.16	714	1.88	486	1.61	311	1.63	323	1.76	404	1.88	486
10,	------	------	4.05	3430	2.95	1610	2.04	609	1.87	479	1.85	465	1.55	278	1.76	404	1.74	391
11,	------	------	4.54	4430	2.83	1450	2.00	575	1.86	472	1.90	500	1.71	372	1.78	417	1.70	365
12,	------	------	4.15	3620	2.76	1360	2.03	600	1.79	424	1.85	465	2.00	575	1.75	398	1.50	250
13,	------	------	3.84	3040	2.67	1250	1.95	538	1.85	465	1.89	493	2.23	778	1.65	335	1.90	500
14,	------	------	3.73	2840	2.76	1360	2.02	592	1.82	444	1.83	451	2.00	575	1.55	278	6.42	9000
15,	------	------	3.59	2600	2.74	1340	2.05	618	1.76	404	1.74	391	1.90	500	1.62	317	4.38	4090
16,	------	------	3.51	2460	2.70	1290	2.36	905	2.00	575	1.70	365	1.73	384	1.74	391	3.60	2620
17,	------	------	3.42	2310	2.65	1230	2.25	798	1.99	568	2.14	696	1.58	294	1.63	323	3.14	1830
18,	------	------	3.20	1960	3.28	2090	2.19	741	2.06	626	2.05	618	1.90	500	1.64	329	3.01	1650
19,	------	------	3.13	1860	3.31	2140	2.12	678	2.02	592	1.83	451	1.77	411	1.71	372	2.68	1220
20.	------	------	3.08	1790	3.14	1880	1.97	552	1.96	545	1.94	530	1.72	378	1.72	378	2.62	1150
21,	------	------	2.99	1670	3.00	1680	2.02	592	1.86	472	1.82	444	1.78	417	1.58	294	2.43	933
22,	------	------	3.12	1850	2.81	1430	2.02	592	1.66	341	1.83	451	1.73	384	1.74	391	2.43	933
23,	------	------	3.02	1710	2.66	1240	2.43	978	1.81	437	1.75	398	1.64	329	1.73	384	2.42	922
24,	------	------	2.98	1650	2.60	1170	2.93	1590	1.83	451	1.86	472	1.67	347	1.65	335	2.34	840
25,	------	------	2.93	1590	2.60	1170	2.61	1180	1.82	444	2.06	626	2.06	626	1.68	353	2.32	820
26,	4.46	4260	2.86	1500	2.57	1140	2.49	1040	1.82	444	1.85	465	1.94	530	1.63	323	2.19	696
27,	4.30	3920	2.86	1500	2.56	1120	2.30	845	1.67	347	1.95	538	1.94	530	1.73	384	2.27	772
28,	4.11	3540	3.00	1680	2.54	1100	2.22	769	1.60	305	1.84	458	1.86	472	1.75	398	2.21	714
29,	4.01	3360	2.96	1630	2.53	1090	2.25	798	1.70	365	1.85	465	1.81	437	1.80	430	2.18	687
30,	5.70	7180	2.80	1420	2.56	1120	2.19	741	1.77	410	1.80	430	1.71	372	1.66	341	2.11	624
31,	------	------	2.77	1380	------	------	2.07	634	1.66	341	------	------	1.59	300	------	------	2.21	714

45 second-feet added to daily discharge Apr. 26-Dec. 16, 1909, while the canal was in operation.

NOTE.—Water withdrawn from canal level below Lock No. 42 and just above New Street Bridge, Bethlehem, Jan. 1, 1909, and restored Mar. 13, 1909. It was again withdrawn on Dec. 17, 1909, and not restored during the remainder of the month.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LEHIGH RIVER, AT SOUTH BETHLEHEM, NORTHAMPTON COUNTY, PA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.97	508	3.13	1820	c8.39	14400	2.77	1380	4.74	4880	3.33	2170	2.49	1040	1.80	430	2.01	584	1.69	359	1.59	300	2.20	750
2,	2.02	547	3.02	1660	8.00	13200	2.69	1280	4.43	4200	3.21	1980	2.42	937	1.68	353	1.90	500	1.60	305	1.88	486	2.21	760
3.	2.34	840	3.02	1660	7.56	12000	2.74	1340	4.19	3700	3.21	1980	2.40	945	1.67	347	1.94	530	1.73	384	2.00	575	2.12	678
4,	2.09	606	2.99	1620	6.52	9210	2.54	1100	4.09	3510	3.28	2090	2.36	905	1.71	372	2.30	845	1.58	294	1.90	500	1.94	530
5,	2.45	955	2.90	1500	5.89	7600	2.62	1190	3.86	3080	3.07	1780	2.35	895	1.91	508	2.25	798	1.61	311	2.26	807	2.05	618
6,	2.14	651	2.79	1360	5.66	7030	2.67	1250	3.50	2500	3.55	2530	2.31	855	1.85	465	1.94	530	1.54	272	2.18	732	2.03	600
7,	2.33	830	2.51	1020	6.04	7980	2.86	1490	3.42	2310	3.32	2150	2.25	798	1.73	384	2.00	575	1.71	372	2.24	788	1.90	500
8,	2.74	1300	2.50	1010	5.98	7830	2.82	1440	3.28	2090	3.07	1780	2.44	989	1.78	417	2.04	609	1.67	347	2.14	696	1.86	472
9,	2.50	1010	2.78	1340	5.32	6200	2.70	1290	3.56	2550	2.95	1610	2.39	935	1.89	493	1.95	538	1.61	311	2.07	634	1.77	410
10,	2.47	977	2.79	1360	4.85	5080	2.62	1190	3.60	2620	3.01	1690	2.32	865	2.02	592	1.84	458	1.64	329	2.08	643	1.72	378
11,	2.34	840	2.64	1170	4.54	4390	2.58	1150	3.40	2280	3.21	1980	2.57	1140	2.24	788	1.75	398	1.57	288	1.97	552	1.71	372
12,	2.25	752	2.48	988	4.30	3880	2.54	1100	3.27	2070	3.35	2200	2.38	925	2.12	678	1.89	493	1.55	278	2.31	855	1.77	410
13,	2.25	752	2.44	944	4.01	3310	2.46	1010	3.14	1880	3.30	2120	2.20	750	1.94	530	1.82	444	1.57	288	2.19	741	1.95	538
14,	2.23	734	2.48	988	3.78	2890	2.47	1020	3.02	1710	3.07	1780	2.02	592	1.86	472	2.37	915	1.49	244	2.26	807	1.85	465
15.	2.09	606	2.56	1080	3.75	2880	2.42	967	2.90	1540	2.92	1570	2.07	634	1.96	545	2.34	885	1.33	160	2.19	741	1.94	530
16,	1.99	522	2.65	1180	3.72	2830	2.35	895	2.86	1490	3.02	1710	2.00	575	1.89	493	2.14	696	1.52	261	2.08	643	1.87	479
17,	2.15	660	2.74	1300	3.62	2650	2.31	855	2.77	1380	3.59	2600	2.24	788	1.82	444	1.89	493	1.63	323	2.17	723	2.06	626
18,	2.23	734	3.62	2600	3.51	2460	4.70	4780	2.74	1340	3.54	2510	2.27	816	1.72	378	1.80	430	1.62	317	2.06	626	1.84	458
19,	2.59	1110	3.28	2040	3.33	2170	5.92	7720	2.75	1350	4.42	4180	2.14	696	1.69	359	1.87	479	1.46	228	2.05	618	1.92	515
20,	3.01	1650	3.04	1690	3.28	2090	5.50	6680	2.71	1300	4.08	3490	2.07	634	1.82	444	1.79	424	1.62	317	1.93	522	1.96	545
21,	3.03	1680	5.00	5430	3.42	2310	5.03	5550	3.26	2060	3.78	2930	2.02	592	1.76	404	1.62	317	1.58	294	2.07	634	1.86	472
22,	a12.74	28400	b6.68	9630	3.46	2380	4.64	4650	3.19	1950	3.34	2180	1.94	530	1.75	398	1.76	404	1.61	311	2.02	592	1.80	430
23,	7.37	11500	5.65	7000	3.34	2180	4.24	3800	3.08	1790	3.20	1960	1.92	515	1.76	404	1.63	323	1.62	317	2.03	600	1.77	410
24,	5.63	6960	4.43	4150	3.27	2070	4.12	3560	3.06	1760	3.04	1740	1.83	451	1.72	378	1.58	294	1.82	444	1.86	472	2.50	1060
25	4.90	5200	3.89	3090	3.19	1950	7.42	11600	4.95	5360	2.91	1560	1.89	493	1.73	384	1.60	305	1.69	359	1.96	545	3.18	1940
26,	4.27	3820	3.64	2640	3.14	1880	d7.93	13100	5.20	5960	2.82	1440	1.85	465	1.68	353	1.77	410	1.63	323	1.99	568	2.71	1300
27,	4.05	3380	3.71	2760	3.06	1760	7.00	10500	4.75	4900	2.82	1440	1.75	398	1.44	217	1.78	417	1.64	329	1.96	545	2.73	1330
28,	3.79	2910	5.89	7600	3.10	1820	5.82	7480	4.26	3840	2.82	1440	1.82	444	1.56	283	1.83	451	1.66	341	2.03	600	2.61	1180
29,	3.63	2620	------	------	3.01	1690	5.11	5740	3.94	3220	2.74	1340	1.78	417	1.73	384	1.74	391	1.54	272	2.09	652	2.67	1250
30,	3.37	2190	------	------	2.92	1570	5.46	6580	3.68	2760	2.66	1240	1.68	353	1.60	305	1.79	424	1.46	228	2.13	687	2.85	1480
31,	3.35	2160	------	------	2.80	1420	------	------	3.40	2280	------	------	1.80	430	1.55	278	------	------	1.64	329	------	------	3.04	1740

a Maximum 13.78 at 7.30 A. M. 32200 sec.-ft.
b Maximum 6.86 at 4.30 P. M. 10100 sec.-ft.
c Maximum 8.54 at 7.30 A. M. 14800 sec.-ft
d Maximum 8.00 at 7 A. M. 13300 sec.-ft.
Note—March 15 to December 31, 1910, 45 sec.-ft. added to daily discharge for canal.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LEHIGH RIVER, AT SOUTH BETHLEHEM, NORTHAMPTON COUNTY, PA.

1911. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.01	1650	2.78	1340	2.97	1590	3.63	2670	3.32	2150	3.45	2360	2.41	956	2.05	618	b6.76	9880	2.66	1240	3.28	2090	3.40	2280
2,	3.52	2430	2.82	1400	2.94	1550	3.51	2460	3.75	2880	3.22	2000	2.34	885	2.05	618	5.17	5880	5.75	7300	3.14	1880	3.29	2100
3,	5.49	6610	2.50	1010	2.86	1450	3.33	2170	3.21	1980	2.93	1590	2.34	885	2.04	609	4.27	3860	4.54	4430	3.01	1690	3.15	1850
4,	6.11	8160	2.81	1380	2.74	1300	3.29	2100	3.12	1850	2.74	1340	2.30	845	2.63	1210	3.82	3010	3.89	3130	2.94	1600	3.27	2030
5,	4.74	4830	3.52	2430	2.54	1060	3.92	3190	3.05	1750	2.61	1180	2.33	875	2.37	915	3.39	2260	3.59	2600	2.91	1560	3.09	1760
6,	4.21	3700	2.75	1310	2.60	1120	4.17	3060	2.90	1540	2.66	1240	2.25	798	2.30	845	3.60	2620	3.28	2090	2.86	1490	3.11	1790
7,	3.97	3230	2.53	1040	2.54	1060	4.11	3540	2.83	1450	2.87	1500	2.17	723	2.18	732	3.66	2720	3.57	2560	3.69	2770	3.07	1730
8,	3.68	2710	2.78	1340	2.36	860	4.01	3350	2.79	1400	2.68	1270	2.42	967	2.59	1160	3.41	2300	3.24	2030	3.25	2040	3.02	1660
9,	3.62	2600	2.70	1240	2.53	1040	3.95	3240	2.72	1320	2.53	1090	2.15	705	2.33	875	3.25	2040	3.15	1890	3.06	1760	2.95	1570
10,	3.24	1980	2.63	1160	2.69	1230	4.01	3350	2.70	1290	2.43	978	2.20	750	2.15	705	3.55	2530	3.04	1740	3.01	1690	2.85	1440
11,	3.16	1860	2.51	1020	3.11	1790	3.88	3110	2.68	1270	2.34	885	2.21	760	2.03	600	3.31	2140	3.10	1820	2.90	1540	2.96	1580
12.	3.24	1980	2.42	922	2.80	1370	3.82	3010	2.64	1220	4.01	3350	2.16	714	1.98	560	3.76	2900	3.17	1920	2.76	1360	2.93	1540
13,	3.42	2270	2.99	1620	2.97	1590	3.68	2760	2.57	1140	5.78	7380	2.04	609	1.90	500	3.34	2180	3.02	1710	3.30	2120	2.89	1490
14,	4.07	3420	2.85	1440	2.87	1460	3.74	2860	2.51	1070	6.55	9340	2.05	617	2.06	626	3.15	1890	2.86	1490	3.25	2040	2.86	1450
15,	**4.73**	**4810**	**2.61**	**1140**	**3.08**	**1790**	4.27	2860	2.52	1080	5.32	6240	2.38	925	1.93	522	3.07	1780	2.78	1390	3.17	1920	2.93	1540
16,	4.25	3780	2.43	933	3.41	2300	3.89	3130	2.46	1010	4.58	4520	2.10	660	1.98	560	3.08	1790	2.87	1510	3.12	1850	3.40	2240
17,	3.64	2640	2.61	1140	2.71	1300	3.86	3080	2.45	1000	4.39	4110	2.94	1600	1.93	522	2.94	1600	2.77	1380	3.04	1740	4.15	3580
18,	3.47	2350	3.01	1650	3.21	1980	3.72	2830	2.46	1010	3.87	3100	3.12	1850	2.03	600	2.85	1480	4.00	3340	3.75	2880	3,73	2800
19,	3.32	2110	3.30	2080	2.97	1640	3.59	2600	2.43	978	3.42	2310	2.50	1060	1.88	486	2.75	1350	4.86	5150	4.46	4260	3.55	2480
20,	3.30	2080	2.80	1370	3.62	1710	4.65	4680	2.61	1180	3.26	2060	2.30	845	1.80	430	2.66	1240	4.36	4050	4.21	3740	3.37	2190
21,	3.26	2010	2.53	1040	3.15	1890	4.79	4990	2.42	967	3.06	1760	2.37	915	1.91	508	2.58	1150	4.17	3660	3.92	3190	3.27	2030
22.	3.16	1860	2.44	944	3.04	1740	4.70	4780	2.39	935	2.94	1600	2.47	1020	1.73	384	2.70	1290	4.72	4830	3.65	2700	3.39	2220
23,	3.03	1680	2.52	1030	3.11	1830	4.67	4720	2.33	875	3.18	1940	2.32	865	1.78	417	2.53	1090	5.45	6560	3.49	2430	3.87	3050
24,	2.86	1450	2.43	933	3.19	1950	4.38	4090	2.32	865	2.97	1640	2.54	1100	1.78	417	2.52	1080	5.28	6150	3.60	2620	4.04	3370
25,	2.64	1170	2.51	1020	2.97	1640	4.07	3470	2.22	769	2.93	1590	2.79	1400	2.10	660	2.44	989	4.73	4850	3.70	2790	3.90	3100
26,	2.82	1400	3.13	1820	3.04	1740	3.84	3040	2.26	807	2.93	1590	2.50	1060	2.33	875	2.33	875	4.28	3880	3.38	2250	3.82	2960
27,	2.78	1340	3.23	1970	3.50	2440	3.70	2790	2.31	855	2.92	1570	2.37	915	2.27	816	2.37	915	4.06	3450	3.38	2250	3.99	3270
28,	2.99	1620	3.38	2200	4.82	5060	3.55	2530	2.12	678	2.78	1390	2.27	816	2.31	855	2.28	826	3.86	3080	3.32	2150	3.83	2980
29,	3.26	2010	------	------	4.38	4090	3.43	2330	2.22	769	2.69	1280	2.15	705	3.80	2970	2.47	1020	3.58	2580	3.56	2550	3.41	2250
30,	3.15	1850	------	------	4.21	3740	3.34	2180	2.23	778	2.57	1140	2.07	634	5.62	6980	2.99	1670	3.50	2440	3.44	2350	3.39	2220
31,	2.94	1550	------	------	3.92	3190	------	------	2.40	945	------	------	2.16	714	a6.02	7980	------	------	3.35	2200	------	------	3.60	2570

a Maximum 6.88 at 5 P. M. 10200 sec.-ft.
b Maximum 7.17 at 7 A. M. 11000 sec.-ft.
Canal in operation March 15 to December 2, 1911, inclusive and 45 sec.-ft added to daily discharge.

ESTIMATED MONTHLY DISCHARGE, LEHIGH RIVER, AT SOUTH BETHLEHEM, NORTHAMPTON COUNTY.

(Drainage area 1,235 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1902.					
September (22-30),	15400	955	6650	5.38	1.80
October,	8900	1980	4810	3.90	4.50
November,	3360	1470	1940	1.57	1.75
December,	26800	1100	4710	3.81	4.39
1903.					
January,	6270	1410	2990	2.42	2.79
February,	17300	2140	4160	3.37	3.51
March,	20100	1040	5590	4.53	5.22
April,	9160	1990	4300	3.48	3.88
May,	1840	775	1200	.972	1.12
June,	4000	605	1960	1.59	1.77
July,	3800	975	1970	1.60	1.84
August,	4820	1080	2280	1.86	2.14
September,	3040	975	1590	1.29	1.44
October,	25800	975	3720	3.01	3.47
November,	3180	830	1330	1.08	1.20
December,	8380	930	1870	1.51	1.74
The year,	25800	605	2750	2.23	30.12
1904.					
January,	8900	930	1940	1.57	1.81
February,	9240	1160	2220	1.80	1.94
March,	20000	2140	5040	4.08	4.70
April,	9810	1550	3270	2.65	2.96
May,	1690	930	1240	1.00	1.15
June,	3180	730	1600	1.30	1.45
July,	3280	640	1260	1.02	1.18
August,	1960	775	1110	.90	1.04
September,	2860	685	1080	.88	.98
October,	8680	875	1730	1.40	1.61
November,	2040	1200	1500	1.21	1.35
December,	4150	830	1320	1.07	1.23
The year,	20000	640	1940	1.57	21.40
[a] 1905.					
January,	20000	1040	3790	3.07	3.54
February (1-13),	1550	1280	1310	1.06	.51
1909.					
April (26-30),	7180	3360	4450	3.60	.67
May,	9540	1380	3360	2.72	3.14
June,	2140	1090	1410	1.14	1.27
July,	1590	538	785	.636	.73
August,	643	305	478	.387	.45
September,	696	266	444	.360	.40
October,	778	278	424	.343	.40
November,	444	278	370	.300	.33
December,	9000	250	1160	.939	1.08

[a] Station discontinued Feb. 13, 1905. Re-established Apr. 26, 1909.

ESTIMATED MONTHLY DISCHARGE, LEHIGH RIVER, AT SOUTH BETHLEHEM, NORTHAMPTON COUNTY.

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1910.					
January,	32200	508	2819	2.283	2.632
February,	10100	944	2522	2.042	2.126
March,	14800	1420	4552	3.686	4.250
April,	13300	855	3723	3.015	3.364
May,	5960	1300	2699	2.185	2.519
June,	4180	1240	2039	1.651	1.842
July,	1140	353	704	0.570	0.657
August,	788	217	428	0.346	0.399
September,	915	294	512	0.415	0.463
October,	444	160	308	0.249	0.287
November,	855	300	629	0.509	0.568
December,	1940	372	749	0.606	0.699
The year,	32200	160	1807	1.463	19.806
1911.					
January,	8160	1170	2682	2.172	2.504
February,	2430	922	1354	1.096	1.141
March,	5060	860	1887	1.528	1.762
April,	4990	2100	3219	2.606	2.908
May,	2880	678	1220	0.988	1.139
June,	9340	885	2445	1.980	2.209
July,	1850	609	909	0.736	0.849
August,	10200	384	1179	0.954	1.100
September,	11000	826	2212	1.791	1.998
October,	7300	1240	3111	2.519	2.904
November,	4260	1360	2243	1.816	2.026
December,	3580	1440	2230	1.806	2.082
The year,	11000	384	2058	1.666	22.622

DELAWARE BASIN—STATION NO. 14.

DELAWARE RIVER AT RIEGELSVILLE, N. J.

This station was established by the United States Geological Survey, July 3, 1906, on the three span, steel suspension, toll highway bridge, at Riegelsville, N. J. A chain gage is attached to the upstream handrail in the middle span 20′ from the east pier. The length of chain from center of rivet to bottom of weight is 43.64, (Jan. 30, 1912), the elevation of zero being arbitrary datum. A B. M. is located on top of steel part of downstream cable anchorage on New Jersey side, which is 40.76 feet above zero of the gage. Discharge measurements are made from the downstream side of the bridge, and the initial point is the face of the left abutment. The channel of the river is straight both above and below the station, the left bank being high and never overflowing, while the right bank, although high, is subject to overflowing during extreme high waters. The bed of the stream is gravel and boulders, and fairly permanent, with from 12′ to 15′ depth of water during ordinary stages. This gage is read twice daily by John H. Deemer, the toll collector at the bridge and by co-operation with the United States Geological Survey, this Department receives weekly report cards.

The Delaware Division Canal parallels the river along the Pennsylvania shore about 200′ from the river, and is measured at a highway bridge, a short distance above the river bridge.

Since the establishment of this gage 16 discharge measurements have been made.

DISCHARGE MEASUREMENTS, DELAWARE RIVER, AT RIEGELSVILLE, N. J.

(Drainage area 6,430 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1906.							
1	July 3,	Follansbee & Winter,	492	4440	1.93	4.52	8,550	
	1907.							
2	Oct. 18,	Grant,	473	4200	1.58	4.14	6,630	Add 246 sec. ft. for canal.
	1908.							
3	Feb. 17,	Bolster & Reckord,	517	10800	7.46	17.10	80,600	Float measurement using ice cakes. No water in canal.
4	Feb. 17,	do	517	10300	7.31	16.05	75,300	No water in canal.
5	Feb. 17,	do	517	9820	6.78	15.20	66,600	do
6	Feb. 18,	do	517	7740	5.02	11.15	38,900	do
7	Feb. 18,	do	517	7590	4.91	10.87	37,300	do
8	Feb. 19,	do	517	6700	4.21	9.16	28,200	do
9	May 8,	Henshaw & Barrows,	516	8730	5.91	13.10	51,600	
10	May 9,	do	517	8180	6.17	13.93	56,700	
11	May 13,	Barrows,	506	6320	3.35	8.11	21,200	
12	Sept. 1,	Bolster,	407	3200	0.47	1.99	1,490	Add 294 sec. ft. for canal.
13	Sept. 15,	Grant,	444	3085	0.36	1.75	1,120	Add 290 sec. ft. for canal.
	1909.							
14	April 22,	do	508	6128	3.58	8.01	21,893	Add 222 sec. ft. for canal.
15	July 9,	do	449	3485	0.78	2.60	2,707	Add 257 sec. ft. for canal.
16	Sept. 4,	Bolster & Rice,	437	3160	0.43	1.82	1,360	Add 261 sec. ft. for canal. Strong wind blowing upstream.

DISCHARGE TABLE FOR DELAWARE RIVER, AT RIEGELSVILLE, N. J., FROM 1906 TO 1912.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.50	810	.70	8490	.90	21130	.10	38690	.30	60250
.60	930	.80	8820	8.00	21600	.20	39310	.40	60970
.70	1060	.90	9160	.10	22080	.30	39930	.50	61690
.80	1200	5.00	9500	.20	22560	.40	40560	.60	62410
.90	1350	.10	9840	.30	23050	.50	41190	.70	63130
2.00	1500	.20	10190	.40	23540	.60	41820	.80	63850
.10	1660	.30	10540	.50	24040	.70	42460	.90	64570
.20	1830	.40	10890	.60	24540	.80	43100	15.00	65300
.30	2010	.50	11250	.70	25050	.90	43750	.10	66030
.40	2200	.60	11610	.80	25560	12.00	44400	.20	66760
.50	2400	.70	11980	.90	26080	.10	45060	.30	67490
.60	2600	.80	12350	9.00	26600	.20	45720	.40	68220
.70	2810	.90	12720	.10	27130	.30	46380	.50	68950
.80	3030	6.00	13100	.20	27660	.40	47050	.60	69680
.90	3260	.10	13480	.30	28200	.50	47720	.70	70410
3.00	3500	.20	13860	.40	28750	.60	48390	.80	71140
.10	3750	.30	14250	.50	29300	.70	49060	.90	71870
.20	4000	.40	14640	.60	29860	.80	49740	16.00	72600
.30	4260	.50	15040	.70	30420	.90	50420	.10	73340
.40	4530	.60	15440	.80	30990	13.00	51100	.20	74080
.50	4800	.70	15850	.90	31560	.10	51790	.30	74820
.60	5080	.80	16260	10.00	32130	.20	52480	.40	75560
.70	5360	.90	16680	.10	32710	.30	53170	.50	76300
.80	5650	7.00	17100	.20	33290	.40	53870	.60	77050
.90	5950	.10	17530	.30	33880	.50	54570	.70	77800
4.00	6250	.20	17960	.40	34470	.60	55270	.80	78550
.10	6560	.30	18400	.50	35060	.70	55970	.90	79300
.20	6870	.40	18840	.60	35660	.80	56680	17.00	80050
.30	7190	.50	19290	.70	36260	.90	57390	18.00	87650
.40	7510	.60	19740	.80	36860	14.00	58100	19.00	95350
.50	7830	.70	20200	.90	37470	.10	58810		
.60	8160	.80	20660	11.00	38080	.20	59530	20.00	103150

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DELAWARE RIVER, AT RIEGELSVILLE, NEW JERSEY.

1906.	JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	-------	-------	4.12	6620	3.42	4580	2.45	2300	4.78	8750	4.18	6810
2,	-------	-------	3.89	5920	3.20	4000	2.44	2280	4.56	8030	3.96	6130
3,	4.45	7670	3.88	5890	3.12	3800	2.50	2400	4.44	7640	4.08	6500
4,	5.44	11000	4.81	8850	3.32	4310	2.59	2580	4.20	6870	3.59	5050
5,	5.50	11200	4.60	8160	3.18	3950	3.20	4000	4.08	6500	3.31	4290
6,	5.14	9980	4.18	6810	3.12	3800	3.28	4210	3.94	6070	3.66	5250
7,	4.68	8420	3.99	6220	2.96	3400	2.90	3260	3.84	5770	4.08	6500
8,	4.26	7060	3.72	5420	2.80	3030	2.85	3140	3.70	5360	5.16	10100
9,	3.99	6220	3.69	5330	2.68	2770	2.85	3140	3.58	5020	4.66	8360
10,	3.96	6130	4.02	6310	2.65	2700	2.78	2990	3.55	4940	4.38	7450
11.	3.90	5950	3.82	5710	2.51	2420	2.72	2850	3.41	4560	4.58	8090
12,	3.78	5590	3.65	5220	2.45	2300	2.72	2850	3.55	4940	4.54	7960
13,	3.60	5080	3.46	4690	2.52	2440	2.68	2770	3.61	5110	4.59	8130
14,	3.45	4670	3.24	4100	2.42	2240	2.58	2560	3.75	5500	4.58	8090
15,	3.22	4050	3.12	3800	2.30	2010	2.55	2500	3.66	5250	4.50	7830
16,	3.15	3880	2.98	3450	2.20	1830	2.64	2680	3.76	5530	4.58	8090
17,	3.10	3750	2.89	3240	2.16	1760	2.54	2480	3.56	4970	4.86	9020
18,	3.10	3750	2.71	2830	2.21	1850	2.46	2320	3.48	4750	5.36	10700
19,	3.05	3630	2.70	2810	2.29	1990	2.42	2240	4.55	8000	4.51	7860
20,	3.05	3630	2.60	2600	2.19	1810	2.49	2380	7.44	19000	4.19	6840
21,	3.01	3530	2.78	2990	2.32	2050	4.90	9160	7.72	20300	4.86	9020
22,	3.42	4580	2.92	3310	2.30	2010	6.42	14700	7.10	17500	5.15	10000
23,	4.08	6500	3.05	3630	3.54	4910	5.35	10700	6.74	16000	5.25	10400
24,	4.18	6810	3.48	4750	3.71	5390	4.75	8660	6.06	13300	4.28	7130
25.	4.06	6440	3.42	4580	2.64	2680	4.76	8690	5.46	11100	3.51	4830
26,	3.80	5650	3.18	3950	2.65	2700	5.62	11700	5.19	10200	3.62	5140
27,	3.52	4860	3.28	4210	2.64	2680	5.76	12200	4.95	9330	3.68	5300
28,	3.40	4530	3.66	5250	2.52	2440	5.29	10500	4.69	8460	3.92	6010
29,	3.58	5020	3.60	5080	2.45	2300	5.10	9840	4.42	7570	4.22	6930
30,	3.70	5360	4.25	7030	2.48	2360	4.86	9020	4.34	7320	4.38	7450
31,	3.98	6190	3.82	5710	-------	-------	5.01	9530	-------	-------	5.38	10800

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DELAWARE RIVER, AT RIEGELSVILLE, NEW JERSEY.

1907.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	12.50	47700	4.65	8330	3.11	3780	7.60	19700	5.15	10000	3.88	5890	4.05	6400	2.35	2100	1.88	1320	5.82	12400	7.10	17500	5.52	11300
2,	12.60	48400	4.72	8560	3.30	4260	6.90	16700	4.96	9400	4.58	8090	3.89	5920	2.25	1940	1.90	1350	5.42	11000	6.40	14600	5.44	11000
3,	10.00	32100	4.66	8360	3.56	4970	6.30	14200	5.02	9570	5.91	12800	3.76	5530	2.94	3300	1.96	1440	4.70	8490	8.50	24000	5.22	10300
4,	8.70	25000	4.50	7830	3.39	4500	5.98	13000	5.01	9530	5.92	12800	3.52	4800	2.29	1990	2.04	1560	4.59	8130	10.30	33900	5.08	9770
5,	8.70	25000	4.18	6810	3.35	4390	5.61	11600	5.21	10200	5.52	11300	3.36	4420	2.21	1850	2.10	1660	4.74	8620	9.10	27100	4.81	8850
6,	8.40	23500	3.90	5950	3.36	4420	5.42	11000	5.30	10500	5.51	11300	3.20	4000	2.28	1970	2.46	2320	5.95	12900	8.10	22100	4.51	7860
7,	7.50	19300	4.10	6560	3.22	4050	5.32	10600	5.19	10100	5.35	10700	3.02	3550	2.29	1990	2.89	3240	5.54	11400	10.60	35700	4.48	7770
8,	7.10	17500	4.00	6250	3.32	4310	5.32	10600	5.21	10200	5.28	10500	3.14	3850	2.28	1970	2.81	3050	6.10	13500	17.20	81600	4.50	7830
9,	8.30	23000	3.98	6190	3.34	4370	5.42	11000	5.45	11100	4.98	9440	3.25	4130	2.28	1970	2.70	2810	6.80	16300	13.70	56000	4.54	7960
10,	8.60	24500	4.04	6370	3.54	4910	5.34	10700	5.58	11500	4.78	8750	3.21	4030	2.16	1760	2.46	2320	6.90	16700	11.20	39300	7.20	18000
11,	7.40	18800	4.08	6500	3.41	4560	5.48	11200	5.46	11100	4.50	7830	3.10	3750	2.25	1920	2.70	2810	6.40	14600	9.90	31600	*20.30	106000
12,	7.00	17100	3.88	5890	3.35	4400	5.29	10500	5.10	9840	4.38	7450	3.11	3780	2.19	1810	3.32	4310	5.65	11800	8.80	25600	17.20	81600
13,	6.70	15900	3.55	4940	3.51	4830	5.48	11200	4.92	9230	4.21	6900	3.05	3620	2.18	1800	4.10	6560	5.31	10600	7.90	21100	12.50	47700
14,	6.60	15400	3.55	4940	5.72	12000	5.60	11600	4.75	8650	4.12	6620	2.92	3310	2.15	1740	4.24	7000	5.14	10000	7.20	18000	10.40	34500
15,	6.60	15400	3.70	5360	9.40	28800	5.62	11700	4.52	7900	4.22	6930	3.02	3550	1.98	1470	3.51	4830	4.71	8520	6.70	15800	9.50	29300
16,	6.60	15400	3.75	5500	9.20	27700	5.49	11200	4.49	7800	4.05	6400	3.11	3780	2.02	1530	3.22	4050	4.52	7890	6.30	14300	8.70	25000
17,	5.95	12900	3.75	5500	11.10	38700	5.12	9900	5.29	10500	3.92	6010	2.94	3360	2.00	1500	2.95	3380	4.32	7250	5.82	12400	8.10	22100
18,	5.04	9640	3.60	5080	11.90	43800	5.10	9840	5.48	11200	3.72	5420	3.00	3500	1.99	1490	2.75	2920	4.10	6560	5.59	11600	7.50	19300
19,	5.32	10600	3.61	5110	12.00	44400	4.99	9470	5.26	10400	3.58	5020	3.18	3950	2.00	1500	2.76	2940	3.99	6220	5.86	12600	7.00	17100
20,	6.40	14600	3.55	4940	11.30	39900	4.89	9130	4.92	9230	3.49	4770	3.15	3870	2.01	1520	2.70	2810	3.84	5770	5.64	11800	6.40	14600
21,	7.20	18000	3.58	5020	10.00	32100	4.71	8520	4.60	8160	3.61	5110	3.12	3800	2.10	1660	2.86	3170	3.80	5650	5.45	11100	6.10	13500
22,	7.90	21100	3.42	4580	9.30	28200	4.62	8220	4.50	7830	3.79	5620	2.98	3450	2.02	1530	2.98	3450	3.79	5620	5.88	12600	5.74	12100
23,	6.20	13900	3.12	3800	10.20	33300	4.48	7770	4.40	7510	3.68	5300	2.94	3360	1.98	1470	3.39	4500	3.75	5500	5.74	12100	6.50	15000
24,	4.91	9200	3.04	3600	13.40	53900	5.18	10100	4.22	6930	3.56	4970	2.69	2790	2.02	1530	6.40	14600	3.71	5390	5.64	11800	9.80	31000
25,	5.06	9700	3.15	3880	12.40	47100	5.49	11200	4.10	6560	3.36	4420	2.62	2640	2.16	1760	5.32	10600	3.68	5300	6.40	14600	13.40	53900
26,	4.98	9430	3.05	3620	10.70	36300	5.94	12900	3.99	6220	3.25	4130	2.61	2620	2.30	2010	4.69	8460	3.66	5250	6.30	14300	11.10	38700
27,	4.64	8290	3.18	3950	9.80	31000	5.75	12200	4.11	6590	3.40	4530	2.51	2420	2.21	1850	4.19	6840	3.62	5140	6.20	13900	9.60	29900
28,	4.75	8650	3.08	3700	9.00	26600	5.71	12000	4.28	7130	3.39	4500	2.39	2180	2.08	1630	3.85	5800	5.12	9910	5.98	13000	8.60	24500
29,	4.80	8820	------	------	9.00	26600	5.72	12000	4.52	7900	3.21	4030	2.39	2180	2.02	1530	5.91	12800	7.20	18000	5.82	12400	8.20	22600
30,	4.84	8960	------	------	9.20	27700	5.32	10600	4.35	7350	3.66	5250	2.45	2300	1.98	1470	6.30	14300	9.40	28800	5.65	11800	8.80	25600
31,	4.78	8750	------	------	8.50	24000	------	------	4.08	6500	------	------	2.32	2050	1.99	1490	------	------	8.30	23000	------	------	8.70	25000

*Dec. 11, crest of discharge was about 125,000 sec. ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DELAWARE RIVER, AT RIEGELSVILLE, NEW JERSEY.

1908.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	8.80	25600	4.60	8160	6.50	15000	10.60	35700	7.00	17100	6.10	13500	2.80	3030	2.60	2600	2.00	1500	2.78	2990	4.56	8030	2.76	2940
2,	8.10	22100	4.60	8160	5.90	12700	9.60	29900	9.00	26600	5.50	11200	2.70	2810	2.35	2100	1.96	1440	2.99	3480	4.10	6560	2.60	2600
3,	7.30	18400	4.40	7510	6.00	13100	9.30	28200	8.60	24500	5.30	10500	3.30	4260	2.35	2100	1.91	1360	2.76	2940	3.74	5480	2.65	2700
4,	6.60	15400	4.10	6560	5.90	12700	8.40	23500	8.20	22600	4.80	8820	3.30	4260	2.25	1920	1.88	1320	2.48	2360	3.51	4830	2.64	2680
5,	6.40	14600	4.20	6870	5.90	12700	7.60	19700	7.50	19300	4.60	8160	3.00	3500	2.25	1920	1.79	1190	2.39	2180	3.36	4420	2.45	2300
6,	5.70	12000	3.90	5950	6.40	14600	7.10	17500	6.90	16700	4.30	7190	3.20	4000	2.20	1830	1.78	1170	2.31	2030	3.25	4130	2.32	2050
7,	4.80	8820	4.10	6560	5.70	12000	6.80	16300	7.20	18000	4.20	6870	3.10	3750	2.30	2010	1.82	1230	2.25	1920	3.21	4030	2.55	2500
8,	6.00	13100	4.00	6250	6.20	13900	7.00	17100	13.10	51800	4.00	6250	3.00	3500	2.45	2300	1.94	1410	2.18	1800	3.08	3700	2.94	3300
9,	5.90	12700	4.00	6250	6.60	15400	7.60	19700	13.60	55300	4.00	6250	2.90	3260	2.30	2010	1.82	1230	2.12	1690	3.04	3600	3.16	3900
10,	5.80	12300	4.00	6250	6.00	13100	9.80	31000	11.80	43100	3.80	5650	2.80	3030	2.25	1920	1.91	1360	2.00	1500	2.95	3380	2.90	3260
11,	5.30	10500	4.00	6250	5.80	12300	8.80	25600	10.60	35700	3.80	5650	2.70	2810	2.25	1920	1.81	1210	1.95	1420	2.99	3480	3.35	4390
12,	6.40	14600	4.00	6250	6.90	16700	8.00	21600	9.20	27700	3.70	5360	2.60	2600	2.30	2010	1.81	1210	2.01	1520	2.94	3360	3.21	4030
13.	9.10	27100	4.10	6560	7.30	18400	7.40	18800	8.20	22600	3.70	5360	2.70	2810	2.30	2010	1.79	1190	2.02	1530	2.96	3400	2.96	3400
14,	10.60	35700	4.50	7830	8.90	26100	6.80	16300	7.60	19700	3.50	4800	2.50	2400	2.20	1830	1.75	1130	2.04	1560	2.84	3120	2.98	3450
15,	9.40	28800	10.00	32100	13.40	53900	6.40	14600	7.90	21100	3.50	4800	2.60	2600	2.15	1740	1.71	1070	2.08	1630	2.98	3450	3.06	3650
16,	8.10	22100	19.20	96900	13.20	52500	6.30	14200	8.80	25600	4.80	8820	2.50	2400	2.05	1580	1.75	1130	2.10	1660	2.99	3480	3.20	4000
17,	7.30	18400	15.70	70400	13.10	51800	7.00	17100	8.00	21600	4.50	7830	2.50	2400	2.15	1740	1.71	1070	2.05	1580	2.86	3170	3.29	4230
18,	6.50	15000	10.90	37500	10.50	35100	6.60	15400	7.40	18800	4.00	6250	2.30	2010	2.15	1740	1.68	1030	2.06	1600	2.88	3210	3.26	4160
19,	6.20	13900	9.10	27100	10.90	37500	6.40	14600	6.70	15800	3.90	5950	2.30	2010	2.15	1740	1.67	1020	2.06	1600	2.89	3240	2.95	3380
20,	6.00	13100	8.20	22600	12.00	44400	6.60	15400	6.40	14600	3.50	4800	2.30	2010	2.05	1580	1.58	910	2.00	1500	2.96	3400	2.94	3360
21,	5.70	12000	6.60	15400	10.80	36900	6.60	15400	6.20	13900	3.40	4530	2.20	1830	2.05	1580	1.69	1050	1.88	1320	2.95	3380	2.99	3480
22,	5.60	11600	6.50	15000	9.40	28800	6.40	14600	6.40	14600	3.30	4260	2.40	2200	2.10	1660	1.60	930	1.94	1410	2.95	3380	3.04	3600
23,	5.60	11600	5.90	12700	8.90	26100	6.20	13900	7.60	19700	3.20	4000	2.30	2010	2.30	2010	1.60	930	1.95	1420	3.01	3520	2.86	3170
24,	5.60	11600	5.50	11200	8.90	26100	5.80	12400	7.70	20200	3.00	3500	2.50	2400	2.25	1920	1.62	960	1.92	1380	3.04	3600	2.81	3050
25,	4.90	9160	5.20	10200	11.20	39300	5.60	11600	7.20	18000	3.10	3750	2.70	2810	2.05	1580	1.70	1060	2.01	1520	2.99	3480	2.85	3140
26,	4.60	8160	9.00	26600	11.60	41800	5.50	11200	6.60	15400	3.10	3750	4.30	7190	2.15	1740	1.68	1030	2.20	1830	2.91	3280	2.98	3450
27.	5.20	10200	10.30	33900	10.30	33900	5.60	11600	7.00	17100	3.10	3750	4.30	7190	2.20	1830	1.62	956	4.09	6530	2.88	3210	2.90	3260
28,	4.60	8160	8.20	22600	12.50	47700	5.80	12400	6.20	13900	2.90	3260	3.70	5360	2.20	1830	1.64	982	4.70	8490	2.82	3080	2.76	2940
29,	5.20	10200	7.00	17100	14.10	58800	6.50	15000	5.50	11200	3.00	3500	3.20	4000	2.15	1740	2.41	2220	5.08	9770	2.78	2990	2.94	3360
30,	4.20	6870	------	------	15.10	66000	6.30	14200	5,50	11200	2.80	3030	2.90	3260	2.00	1500	2.86	3170	5.48	11200	2.72	2850	2.79	3010
31,	3.60	5080	------	------	12.50	47700	------	------	6.30	14200	------	------	2.70	2810	2.05	1580	------	------	5.40	10900	------	------	2.86	3170

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DELAWARE RIVER, AT RIEGELSVILLE, NEW JERSEY.

1909.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.81	3050	4.31	7220	8.88	26000	7.01	17100	9.85	31300	4.12	6620	3.32	4310	2.41	2220	1.95	1420	2.16	1760	1.92	1380	2.18	1800
2,	2.64	2680	4.05	6400	8.00	21600	6.71	15900	12.75	49400	3.86	5830	3.11	3780	2.34	2090	1.91	1360	2.11	1680	1.96	1440	2.20	1830
3,	2.89	3240	4.06	6440	7.54	19500	6.50	15000	12.59	48300	3.81	5680	3.00	3500	2.36	2120	1.92	1380	1.99	1480	2.01	1520	2.22	1870
4,	3.21	4030	3.94	6070	7.22	18000	6.58	15400	10.95	37800	3.74	5480	2.85	3140	2.26	1940	1.86	1290	1.99	1480	1.95	1420	2.21	1850
5,	3.48	4750	4.09	6530	6.65	15600	6.76	16100	11.44	40800	3.85	5800	2.76	2940	2.26	1940	1.86	1290	2.08	1630	1.96	1440	2.05	1580
6,	8.65	24800	4.41	7540	6.14	13600	6.55	15200	10.40	34500	4.20	6870	2.78	2990	2.22	1870	1.81	1220	2.00	1500	1.86	1290	2.19	1810
7,	16.55	76700	5.56	11500	5.86	12600	6.38	14600	9.20	27700	4.81	8850	2.71	2830	2.18	1800	1.89	1340	1.90	1350	1.78	1170	2.24	1900
8,	10.80	36900	7.29	18400	6.02	13200	6.56	15300	8.85	25800	4.49	7800	2.62	2640	2.10	1660	1.86	1290	1.95	1420	1.89	1340	2.19	1810
9,	8.26	22900	6.22	13900	5.95	12900	6.84	16400	8.91	26100	4.22	6930	2.55	2500	2.14	1730	1.78	1170	1.94	1410	1.96	1440	2.21	1850
10,	7.12	17600	5.65	11800	6.10	13500	6.26	14100	7.90	21100	4.10	6560	2.52	2440	2.12	1690	1.78	1170	1.86	1290	1.88	1320	2.01	1520
11,	6.62	15500	7.78	20600	6.60	15400	5.85	12500	7.98	21500	4.05	6400	2.48	2360	2.06	1600	2.16	1760	1.89	1340	1.88	1320	2.01	1520
12,	6.08	13400	7.68	20100	8.90	26100	5.49	11200	9.86	31300	4.05	6400	2.52	2440	2.12	1690	2.11	1680	2.01	1520	1.90	1350	1.92	1380
13,	5.54	11400	6.96	16900	7.54	19500	5.21	10200	8.60	24500	4.34	7320	2.42	2240	2.10	1660	2.11	1680	2.29	1990	1.88	1320	2.11	1680
14,	5.00	9500	6.61	15500	7.05	17300	5.78	12300	7.62	19800	4.26	7060	2.44	2280	2.00	1500	2.10	1660	2.05	1580	1.81	1220	7.04	17300
15,	4.66	8360	7.01	17100	6.68	15800	9.62	30000	7.06	17400	4.21	6900	2.42	2240	1.99	1480	2.06	1600	2.05	1580	1.84	1260	5.62	11700
16,	4.44	7640	8.42	23600	6.29	14200	12.09	45000	6.72	15900	4.78	8750	2.62	2640	2.12	1690	2.05	1580	2.06	1600	1.90	1350	4.89	9130
17,	3.98	6190	13.19	52400	6.01	13100	10.72	36400	6.46	14900	4.64	8290	2.58	2560	2.41	2220	2.10	1660	2.04	1560	1.74	1120	4.38	7450
18,	4.05	6400	12.74	49300	5.60	11600	9.12	27200	6.08	13400	4.85	8990	2.44	2280	2.48	2360	2.31	2030	1.99	1480	1.81	1220	3.94	6070
19,	4.02	6310	10.29	33800	5.32	10600	8.18	22500	6.02	13200	5.89	12700	2.46	2320	2.79	3010	2.04	1560	2.08	1630	1.85	1280	3.32	4310
20,	3.64	5190	12.70	49100	5.22	10300	7.50	19300	5.69	11900	5.78	12300	2.38	2160	2.80	3030	2.08	1630	1.92	1380	1.89	1340	3.22	4050
21,	3.90	5950	19.48	99100	4.98	9430	7.88	21000	5.34	10700	5.09	9810	2.30	2010	2.79	3010	2.00	1500	1.98	1470	1.79	1190	3.04	3600
22,	3.86	5830	14.28	60100	4.80	8820	8.00	21600	5.24	10300	4.72	8560	2.41	2220	2.58	2560	1.96	1440	2.01	1520	1.91	1360	2.92	3310
23,	4.06	6440	11.34	40200	4.68	8420	7.79	20600	5.01	9530	4.39	7480	2.64	2680	2.50	2400	1.98	1470	1.95	1420	1.98	1470	2.81	3050
24,	4.30	7190	12.46	47500	4.54	7960	8.49	24000	4.99	9470	4.12	6620	3.26	4160	2.48	2360	2.10	1660	2.04	1560	1.94	1410	2.98	3450
25,	5.06	9700	14.38	60800	5.11	9880	8.06	21900	4.79	8790	4.04	6370	3.01	3520	2.28	1970	2.32	2050	2.21	1850	2.12	1690	2.86	3170
26,	9.32	28300	13.60	55300	9.62	30000	7.44	19000	4.51	7860	3.86	5830	2.94	3360	2.26	1940	2.18	1800	2.15	1740	2.24	1900	2.98	3100
27,	7.98	21500	11.52	41300	10.52	35200	6.99	17100	4.40	7510	3.66	5250	2.88	3210	2.16	1760	2.16	1760	2.08	1630	2.14	1730	2.58	2100
28,	6.75	16100	9.82	31100	8.80	25600	6.79	16200	4.50	7830	3.59	5050	2.76	2940	2.09	1640	2.22	1870	2.05	1580	2.00	1500	2.66	2460
29,	5.86	12600	------	------	8.49	24000	6.70	15800	4.66	8360	3.50	4800	2.82	3080	1.98	1470	2.05	1580	2.01	1520	2.16	1760	2.49	2140
30,	5.31	10600	------	------	8.14	22300	8.34	23200	4.48	7770	3.38	4480	2.60	2600	2.00	1500	2.15	1740	1.99	1480	2.14	1730	2.32	1840
31,	4.92	9230	------	------	7.56	19600	------	------	4.32	7250	------	------	2.54	2480	1.99	1480	------	------	1.92	1380	------	------	2.20	1650

Some ice running and slush ice in first part January. Ice conditions Dec. 26-31; river frozen over Dec. 30 and 31. No water flowing in canal Jan. 1 to Mar. 18 and Dec. 20-31. The discharges are based on a rating curve that is well defined between 1,100 and 80,000 second-feet. Discharges Dec. 26-31, reduced 10 per cent. from open channel rating because of ice conditions.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DELAWARE RIVER, AT RIEGELSVILLE, NEW JERSEY.

1910.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.20	1460	5.02	9570	17.85	86500	6.51	15100	9.24	27900	4.95	9330	3.60	5080	2.15	1740	2.20	1830	2.15	1740	1.90	1350	3.00	3500
2,	2.62	2110	4.70	8490	18.76	93500	6.06	13300	8.29	23000	4.76	8690	3.40	4530	2.15	1740	2.25	1920	2.20	1830	1.85	1280	2.90	3260
3,	2.78	2390	4.69	8460	17.49	83800	5.62	11700	7.51	19300	4.64	8290	3.30	4260	2.25	1920	2.30	2010	2.15	1740	1.95	1420	2.85	3140
4,	2.48	1820	4.61	8190	14.91	64600	5.28	10500	7.06	17400	4.64	8290	3.10	3750	2.25	1920	2.65	2700	2.10	1660	2.50	2400	2.70	2810
5,	2.50	1920	4.44	7640	13.12	51900	5.15	10000	6.92	16800	4.34	7320	3.10	3750	2.25	1920	2.70	2810	2.00	1500	3.20	4000	2.65	2700
6,	2.52	2020	3.95	6100	12.05	44700	5.01	9530	6.61	15500	4.70	8490	3.00	3500	2.30	2010	2.70	2810	1.95	1420	3.40	4530	2.65	2700
7,	2.95	2700	3.34	4370	12.45	47400	5.09	9810	6.15	13700	5.01	9530	2.85	3140	2.20	1830	2.90	3260	2.00	1500	3.40	4530	2.65	2700
8,	3.30	3410	3.49	4770	14.85	64200	5.50	11200	5.75	12200	5.10	9840	2.95	3380	2.20	1830	3.00	3500	1.95	1420	3.20	4000	2.65	2700
9,	3.02	2840	3.69	5330	12.71	49100	5.42	11000	5.68	11900	4.78	8750	3.00	3500	2.45	2300	2.85	3140	1.90	1350	3.10	3750	2.30	2010
10,	3.35	2500	3.78	5590	11.10	38700	5.11	9880	5.79	12300	4.54	7960	2.85	3140	2.45	2300	2.80	3030	1.95	1420	3.00	3500	2.40	2200
11,	3.69	2100	3.68	5300	9.52	29400	4.84	8960	5.66	11800	4.81	8850	2.95	3380	2.55	2500	2.60	2600	1.95	1420	2.90	3260	2.45	2300
12,	3.60	1800	3.54	4910	8.62	24600	4.66	8360	5.51	11300	5.20	10200	2.85	3140	3.40	4530	2.50	2400	1.90	1350	2.85	3140	2.35	2100
13,	3.41	1600	3.84	5770	8.15	22300	4.56	8030	5.12	9910	5.79	12300	2.75	2920	3.00	3500	2.45	2300	1.80	1200	3.10	3750	2.20	1830
14,	3.39	1500	3.79	5620	8.16	22400	4.60	8160	4.91	9190	5.62	11700	2.65	2700	2.70	2810	2.40	2200	1.85	1280	3.60	5080	2.35	2100
15,	3.15	1500	3.82	5710	8.00	21600	4.56	8030	4.61	8190	5.15	10000	2.65	2700	2.60	2600	2.75	2920	1.80	1200	3.40	4530	2.40	2200
16,	2.98	1400	3.85	5800	7.36	18700	4.31	7220	4.54	7960	4.86	9020	2.50	2400	2.70	2810	2.45	2300	1.80	1200	3.20	4000	2.35	2100
17,	3.01	1400	3.96	6130	6.91	16700	4.22	6930	4.36	7380	5.24	10300	2.50	2400	2.45	2300	2.35	2100	1.80	1200	3.10	3750	2.30	2010
18,	3.10	1500	4.75	8660	6.71	15900	6.01	13100	4.26	7060	5.41	10900	2.65	2700	2.40	2200	2.30	2010	1.80	1200	3.00	3500	2.25	1920
19,	3.32	1800	4.38	7450	6.29	14200	9.78	30900	4.22	6930	5.99	13100	2.60	2600	2.30	2010	2.30	2010	1.80	1200	2.95	3380	2.50	2400
20,	3.68	2000	4.15	6710	6.21	13900	9.84	31200	4.18	6810	5.69	11900	2.55	2500	2.20	1830	2.25	1920	1.85	1280	2.75	2920	2.60	2600
21,	3.71	5000	6.65	15600	6.82	16300	9.02	26700	4.49	7800	5.62	11700	2.55	2500	2.25	1920	2.20	1830	1.85	1280	2.75	2920	2.30	2010
22,	14.20	59500	8.75	25300	7.98	21500	8.14	22300	4.60	8160	5.00	9500	2.55	2500	2.25	1920	2.20	1830	1.85	1280	2.80	3030	2.35	2100
23,	18.90	94600	8.06	21900	7.92	21200	7.35	18600	4.36	7380	4.60	8160	2.55	2500	2.35	2100	2.10	1660	1.80	1200	2.75	2920	2.30	2010
24,	12.96	50800	7.19	17900	7.66	20000	6.89	16600	4.35	7350	4.29	7160	2.45	2300	2.20	1830	2.05	1580	2.00	1500	2.70	2810	2.70	2810
25,	10.10	32700	6.82	16300	7.94	21300	9.49	29200	5.12	9910	4.02	6310	2.45	2300	2.15	1740	2.05	1580	2.00	1500	2.90	3260	2.55	2500
26,	8.26	22900	6.18	13800	8.46	23800	11.92	43900	6.14	13600	3.82	5710	2.40	2200	2.15	1740	1.95	1420	1.95	1420	2.65	2700	3.60	5080
27,	7.41	18900	6.25	14100	9.50	29300	15.19	66700	7.02	17200	3.79	5620	2.35	2100	2.05	1580	2.00	1500	1.90	1350	2.70	2810	3.50	4800
28,	6.75	16100	8.01	21600	8.11	22100	12.68	48900	6.70	15800	3.69	5330	2.40	2200	1.85	1280	2.15	1740	2.00	1500	2.90	3260	3.70	5360
29,	6.30	14200	------	------	7.29	18400	10.36	34200	6.15	13700	3.58	5020	2.30	2010	1.95	1420	2.15	1740	1.90	1350	3.00	3500	3.80	5650
30.	5.56	11500	------	------	6.82	16300	9.86	31300	5.59	11600	3.70	5360	2.20	1830	2.10	1660	2.15	1740	1.75	1130	2.95	3380	4.00	6250
31,	5.35	10700	------	------	6.58	15400	------	------	5.18	10100	------	------	2.05	1580	1.95	1420	------	------	1.80	1200	------	------	3.90	5950

River frozen over at gage and gage heights taken to top of ice Jan. 1 to 9. Gage heights were also probably affected by ice lodged on control point below gage from Jan. 10 to 21. Ice freshet Jan. 23. River partly or wholly frozen over from Dec. 5 to Dec. 23. Gage heights taken to top of ice Dec. 12 to 14. Except as noted, gage readings during winter were to water surface. Discharge from Jan. 1 to 9 reduced 10 per cent. and discharge from Jan. 10 to 21 estimated by means of climatologic records. Although ice collecting on control point at lower end of pool in which Riegelsville gage is located may have caused slight backwater from Feb. 8 to 20, no reduction was made in the computed discharge. Slight backwater caused by ice may have existed from about Dec. 6 to 24, but the general relation of gage height to discharge was probably not changed during December owing to the fact that the control point below the gage probably remained open, and hence no reduction was made in the computed discharge for this period.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DELAWARE RIVER, AT RIEGELSVILLE, NEW JERSEY.

1911.	JAN.		FEB.		MAR.		APRIL.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
DAY.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.7	8490	4.6	8160	4.2	6870	8.6	24500	5.6	11600	3.7	5360	3.4	4530	2.6	2600	9.0	26600	3.6	5080	5.5	11200	5.9	12700
2,	5.2	10200	4.4	7510	4.4	7510	7.4	18800	5.9	12700	3.8	5650	3.3	4260	2.5	2400	7.0	17100	5.9	12700	5.3	10500	5.5	11200
3,	6.6	15400	4.1	6560	4.4	7510	6.6	15400	5.7	12000	3.7	5360	3.2	4000	2.45	2300	5.8	12400	6.3	14200	5.4	10900	5.3	10500
4,	12.2	45700	4.5	7830	4.0	6250	6.1	13500	5.5	11200	3.4	4530	3.2	4000	2.7	2810	5.0	9500	5.9	12700	5.0	9500	5.2	10200
5,	9.8	31000	5.2	10200	3.7	5360	6.8	16300	5.3	10500	3.4	4530	3.1	3750	2.6	2600	4.5	7830	5.2	10200	4.8	8820	5.0	9500
6,	7.3	18400	4.3	7190	3.7	5360	7.3	18400	4.9	9160	3.4	4530	2.95	3380	2.6	2600	4.2	6870	4.8	8820	4.7	8490	4.8	8820
7,	6.3	14200	3.9	5950	3.6	5080	10.7	36300	4.7	8490	3.5	4800	3.0	3500	2.5	2400	4.5	7830	4.7	8490	5.4	10900	4.8	8820
8,	6.0	13100	3.9	5950	3.4	4530	11.8	43100	4.5	7830	3.8	5650	2.95	3380	2.65	2700	4.4	7510	5.0	9500	5.4	10900	4.7	8490
9,	5.9	12700	3.8	5650	3.4	4530	10.5	35100	4.3	7190	3.8	5650	3.1	3750	2.65	2700	4.7	8490	5.5	11200	5.2	10200	4.7	8490
10,	5.3	10500	3.6	5080	3.5	4800	9.6	29900	4.3	7190	3.6	5080	2.95	3380	2.6	2600	4.7	8490	5.1	9840	5.0	9500	4.6	8160
11,	5.0	9500	3.7	5360	4.1	6560	8.8	25600	4.2	6870	3.3	4260	2.95	3380	2.5	2400	4.7	8490	4.8	8820	4.8	8820	4.7	8490
12,	4.7	8490	3.8	5650	3.9	5950	8.3	23000	4.1	6560	5.4	10900	2.9	3260	2.5	2400	5.5	11200	4.8	8820	4.7	8490	4.7	8490
13,	4.8	8820	4.1	6560	4.3	7190	7.8	20700	3.9	5950	12.0	44400	2.9	3260	2.35	2100	4.7	8490	4.6	8160	4.9	9160	4.7	8490
14,	5.6	11600	4.0	6250	4.4	7510	7.5	19300	3.8	5650	13.5	54600	2.85	3140	2.3	2010	4.4	7510	4.4	7510	5.4	10900	4.6	8160
15,	6.8	16300	3.8	5650	5.2	10200	8.3	23000	3.8	5650	12.2	45700	3.1	3750	2.25	1920	4.1	6560	4.2	6870	5.6	11600	4.7	8490
16,	7.6	19700	3.4	4530	6.4	14600	9.9	31600	3.7	5360	9.5	29300	2.9	3260	2.3	2010	4.1	6560	4.1	6560	5.4	10900	5.3	10500
17,	6.1	13500	3.5	4800	5.7	12000	8.9	26100	3.6	5080	8.1	22100	2.85	3140	2.25	1920	3.9	5950	4.1	6560	5.2	10200	6.6	15400
18,	5.2	10200	3.7	5360	5.6	11600	8.0	21600	3.7	5360	7.6	19700	3.7	5360	2.2	1830	3.7	5360	5.4	10900	5.8	12400	7.0	17100
19,	4.8	8820	4.4	7510	5.2	10200	7.2	18000	3.8	5650	6.7	15800	3.2	4000	2.25	1920	3.6	5080	8.9	26100	7.4	18800	6.5	15000
20,	4.6	8160	4.0	6250	5.0	9500	7.7	20200	3.9	5950	6.0	13100	3.1	3750	2.05	1580	3.5	4800	9.6	29900	8.2	22600	6.1	13500
21,	4.8	8820	3.6	5080	4.9	9160	9.3	28200	3.8	5650	5.3	10500	2.9	3260	2.05	1580	3.3	4260	8.5	24000	7.3	18400	5.5	11200
22,	4.9	9160	3.6	5080	4.8	8820	8.7	25000	3.7	5360	4.9	9160	3.2	4000	2.15	1740	3.3	4260	8.7	25000	6.6	15400	5.4	10900
23,	4.7	8490	3.6	5080	5.4	10900	9.0	26600	3.6	5080	4.7	8490	2.95	3380	2.0	1500	3.2	4000	9.9	31600	6.2	13900	6.4	14600
24,	4.2	6870	3.5	4800	6.3	14200	8.5	24000	3.5	4800	4.6	8160	3.0	3500	2.05	1580	3.2	4000	10.7	36300	6.2	13900	7.7	20200
25,	4.0	6250	3.5	4800	6.2	13900	7.8	20700	3.4	4530	4.5	7830	3.6	5080	2.2	1830	3.1	3750	9.7	30400	6.2	13900	8.2	22600
26,	4.0	6250	4.2	6870	5.5	11200	7.1	17500	3.4	4530	4.4	7510	3.4	4530	2.55	2500	3.1	3750	8.5	24000	6.1	13500	7.3	18400
27,	3.9	5950	4.5	7830	5.9	12700	6.6	15400	3.3	4260	4.3	7190	3.1	3750	2.7	2810	2.95	3380	7.6	19700	5.8	12400	7.2	18000
28,	4.3	7190	4.7	8490	12.9	50400	6.3	14200	3.2	4000	4.2	6870	2.9	3260	2.85	3140	2.95	3380	7.0	17100	5.5	11200	7.3	18400
29,	4.7	8490	------	------	13.0	51100	6.0	13100	3.2	4000	4.0	6250	2.85	3140	3.0	3500	3.1	3750	6.5	15000	5.7	12000	6.6	15400
30,	7.2	18000	------	------	9.6	29900	5.8	12400	3.1	3750	3.9	5950	2.65	2700	6.1	13500	3.6	5080	6.1	13500	5.7	12000	5.8	12400
31,	5.8	12400	------	------	10.1	32700	------	------	3.2	4000	------	------	2.7	2810	7.2	18000	------	------	5.7	12000	------	------	5.7	12000

ESTIMATED MONTHLY DISCHARGE, DELAWARE RIVER AT RIEGELSVILLE, N. J.

(Drainage area 6,430 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a 1906.					
July,	11200	3520	5950	.969	1.12
August,	8850	2600	4980	.818	.94
September,	5390	1760	2880	.491	.55
October,	14700	2240	5500	.899	1.04
November,	20300	4560	8450	1.36	1.52
December,	10800	4290	7490	1.19	1.37
b 1907.					
January,	48400	8290	17900	2.78	3.20
February,	8560	3600	5610	.87	.91
March,	53900	3780	21300	3.31	3.82
April,	19700	7770	11300	1.79	2.00
May,	11500	6220	8930	1.43	1.65
June,	12800	4030	7090	1.15	1.28
July,	6400	2050	3640	.61	.70
August,	3360	1470	1780	.32	.37
September,	14600	1320	4900	.81	.90
October,	28800	5140	10500	1.68	1.94
November,	81600	11100	21800	3.44	3.84
December,	106000	7770	25400	3.97	4.58
The year,	106000	1320	11700	1.85	25.19
c 1908.					
January,	35700	5080	14800	2.30	2.65
February,	96900	5950	18900	2.94	3.17
March,	66000	12000	30200	4.70	5.42
April,	35700	11200	18200	2.86	3.19
May,	55300	11200	22200	3.50	4.04
June,	13500	3030	6040	.983	1.10
July,	7190	1830	3240	.547	.63
August,	2600	1500	1860	.333	.38
September,	3170	906	1250	.238	.27
October,	11200	1320	3040	.516	.59
November,	8030	2850	3810	.636	.71
December,	4400	2050	3290	.524	.60
The year,	96900	906	10600	1.67	22.75

a In order to determine the discharge per square mile and the run off depth in inches, 280 second-feet were added to the daily discharge during the period July 1 to December 14 ,before computing the discharge per square mile. Hence the first three columns represent the actual discharge available in the river, and the two columns remaining represent the actual run-off from the drainage area above Riegelsville, including the discharge of the canal.

b In order to determine the discharge per square mile and the run-off depth in inches, 280 second-feet were added to the daily discharge during the period April 8 to December 12, 1907, before computing the discharge per square mile. Hence the first three columns represent the actual discharge available in the river, and the two columns remaining represent the actual run-off from the drainage area above Riegelsville, including the discharge of the canal.

c In order to determine the discharge per square mile and the run-off depth in inches, 280 second-feet added to the daily discharge during the period April 6 to December 9, before computing the discharge per square mile. Hence the first three columns represent the actual discharge available in the river, and the two columns remaining represent the actual run-off from the drainage area above Riegelsville, including the discharge of the canal.

ESTIMATED MONTHLY DISCHARGE, DELAWARE RIVER AT RIEGELSVILLE, N. J.

(Drainage area 6,430 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a 1909.					
January,	76700	2680	13500	2.10	2.42
February,	99100	6070	29600	4.60	4.79
March,	35200	7960	16800	2.63	3.03
April,	45000	10200	19400	3.06	3.41
May,	49400	7250	20100	3.17	3.66
June,	12700	4480	7190	1.16	1.29
July,	4310	2010	2800	.477	.55
August,	3030	1470	1980	.350	.40
September,	2050	1170	1550	.283	.32
October,	1990	1290	1540	.281	.32
November,	1900	1120	1410	.261	.29
December,	17300	1380	3630	.589	.68
The year,	99100	1120	9958	1.53	21.16
b 1910.					
January,	94600	1400	12200	1.900	2.190
February,	25300	4370	9900	1.540	1.600
March,	93500	13900	33900	5.300	6.110
April,	66700	6936	19400	3.050	3.400
May,	27900	6810	12200	1.940	2.240
June,	13100	5020	8820	1.410	1.570
July,	5080	1580	2890	.491	.570
August,	4530	1420	2100	.369	.430
September,	3500	1420	2210	.386	.430
October,	1830	1130	1380	.257	.300
November,	5080	1280	3290	.554	.620
December,	6250	1830	3030	.482	.560
The year,	94600	1130	9270	1.470	20.020
c 1911.					
January,	45700	5950	12700	1.98	2.28
February,	10200	4530	6290	.98	1.02
March,	51100	4530	12800	2.02	2.33
April,	43100	12400	22600	3.56	3.97
May,	12700	3750	6640	1.07	1.23
June,	54600	4260	13000	2.05	2.29
July,	5360	2700	3670	.61	.71
August,	18000	1500	3140	.53	.61
September,	26600	3380	7410	1.19	1.33
October,	36300	5080	15200	2.41	2.78
November,	22600	8490	12000	1.91	2.13
December,	22600	8160	12400	1.94	2.24
The year,	54600	1500	10700	1.70	22.92

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a In order to obtain the discharge per square mile and the run-off depth in inches, 270 second-feet were added March 19 to December 19, 1909, before computing the discharge per square mile. Hence the first three columns contain the actual discharge available in the river, while the remaining two columns represent the actual run-off from the drainage area above Riegelsville, including the discharge of the canal.

b In order to determine the discharge per square mile and the run-off depth in inches, 270 second-feet were added to the daily discharge during the period March 10 to December 8, before computing the discharge per square mile. Hence the first three columns represent the actual discharge available in the river, and the two columns remaining represent the actual run-off from the drainage area above Riegelsville, including the discharge of the canal.

c In order to determine the discharge per square mile and the run-off depth in inches, 270 second-feet were added to the daily discharge during the period March 10 to December 7, before computing the discharge per square mile. Hence the first three columns represent the actual discharge available in the river, and the two columns remaining represent the actual run-off from drainage area above Riegelsville, including the discharge of the canal.

DELAWARE BASIN—STATION NO. 15.

TOHICKON CREEK AT POINT PLEASANT, PA.

Tohickon creek rises in the western part of Bucks county, Pa., and flows eastward into the Delaware at Point Pleasant. Its drainage area comprises about 102 square miles, the greater part being farm land under a high degree of cultivation, the original forest cover having been almost entirely cut away. The stream is subject to very sudden freshets, and during heavy rains large quantities of surface soil are eroded. The fall of the stream from its source to the gaging station is about 600 feet in 28 miles. The average yearly rainfall over this watershed is from 45 to 50 inches.

The gaging station is located about one-eighth mile above the mouth of the creek, and the records show the discharge of practically the entire drainage area. Continuous records of flow have been obtained each year since 1883, with the exception of 1900, by the Philadelphia Bureau of Water, Department of Public Works, under the personal supervision of John E. Codman.

An automatic gage is used to obtain a continuous record of gage height. The lower part of the rating curve has been developed from the computed discharge over a weir, and the discharge at high stages is determined from a curve developed from current-meter measurements. The rating curve is well defined.

The following data have been furnished by the United States Geological Survey, and the Philadelphia Bureau of Water.

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK AT POINT PLEASANT, BUCKS COUNTY, PENNA.

1883.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.
1,	----------	3	90	49
2,	----------	6	55	46
3,	----------	10	39	43
4,	----------	28	33	31
5,	----------	24	26	43
6,	----------	11	26	37
7,	----------	11	30	41
8,	----------	11	30	61
9,	----------	13	36	81
10,	----------	7	35	122
11,	----------	12	151	81
12,	----------	7	118	41
13,	4	9	79	41
14,	7	5	54	41
15,	7	7	43	41
16,	1	18	29	41
17,	2	15	20	41
18,	11	7	20	41
19,	5	9	15	41
20,	4	18	23	41
21,	3	12	17	110
22,	4	12	21	100
23,	2	13	18	100
24,	2	456	18	100
25,	5	189	21	100
26,	5	99	24	100
27,	8	95	220	100
28,	6	69	165	260
29,	5	356	85	250
30,	5	687	49	240
31,	----------	179	----------	230

fr

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY. PA.

1884.	JAN	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	331	406	384	359	29	10	589	35	29	7	150	159
2,	473	395	376	333	26	10	372	41	18	6	125	159
3,	515	395	368	400	20	8	247	30	18	5	102	139
4,	445	396	360	279	20	6	216	52	18	5	205	48
5,	354	396	419	217	20	5	2309	100	11	5	313	44
6,	354	396	392	155	20	7	1507	103	5	4	253	256
7,	467	1989	365	92	19	8	863	76	7	2	81	1560
8,	2593	2412	362	80	18	9	612	42	7	2	64	309
9,	3492	1270	359	408	17	10	256	32	7	2	21	164
10	2749	1270	356	373	129	35	131	22	7	2	21	77
11,	1579	889	1113	338	150	35	39	20	9	1	22	50
12,	590	399	1871	305	103	34	25	20	6	1	23	662
13,	590	1743	1148	223	75	33	31	19	2	1	19	651
14,	502	2103	425	141	349	33	31	11	2	1	12	178
15,	390	585	410	160	204	33	31	10	3	1	12	1112
16,	390	434	395	300	93	33	31	8	3	1	12	387
17,	390	621	380	258	54	33	26	5	3	0	12	159
18,	377	1218	365	216	36	34	22	5	3	0	12	108
19,	361	1000	1114	173	34	34	22	4	4	0	10	73
20,	361	1862	1390	109	49	33	15	4	4	0	13	251
21,	382	1314	414	46	67	31	15	4	2	0	25	315
22	409	1204	400	42	59	22	15	7	3	0	25	323
23,	409	2008	380	38	43	9	10	12	3	2	46	363
24,	409	900	1000	44	29	4	9	11	4	4	859	211
25,	409	855	425	35	24	4	9	9	5	5	211	159
26,	409	739	800	28	22	4379	7	4	4	4	106	123
27,	409	623	568	21	15	1460	5	3	2	5	68	100
28,	411	507	336	15	13	1242	7	4	2	8	52	83
29,	415	392	321	15	10	1024	11	17	2	20	201	107
30,	415	--------	306	41	10	807	20	26	6	20	159	240
31,	415	--------	385	--------	9	--------	22	28	--------	250	--------	2372

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1885.	JAN	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	2614	75	59	1291	50	8	1	1	8	1	84	123
2,	480	73	61	1004	62	12	2	35	7	5	635	149
3,	138	72	102	518	60	15	3	696	7	3	345	164
4,	138	75	119	1013	60	10	3	1489	7	5	131	155
5,	140	58	183	3664	55	13	109	188	2	5	73	128
6,	1599	79	218	2411	28	12	325	50	5	3	61	132
7,	949	116	231	868	37	9	107	58	5	6	55	83
8,	232	135	196	203	172	6	14	210	4	7	953	121
9,	176	425	174	169	186	9	5	180	6	6	1137	172
10	167	1463	115	146	82	10	5	120	4	5	286	543
11,	82	1885	83	118	63	10	4	54	6	10	151	258
12,	1404	738	69	118	63	9	4	29	6	3	94	110
13,	423	403	59	112	63	4	3	33	7	18	69	382
14,	103	283	64	76	61	2	3	61	4	12	57	809
15,	293	477	149	76	29	4	3	49	1	14	41	367
16,	784	697	162	76	25	6	3	29	3	12	46	144
17,	1267	724	202	76	23	8	1	25	5	11	39	144
18,	216	238	180	59	23	3	1	19	2	10	35	128
19,	101	218	178	42	22	7	1	17	1	6	26	103
20,	94	202	170	42	16	6	1	7	1	8	33	76
21,	87	192	116	40	14	6	1	11	5	44	29	63
22,	91	177	69	29	14	5	0	18	1	112	23	63
23,	98	163	64	29	14	4	0	17	1	66	244	53
24,	101	150	51	29	19	4	1	17	4	34	720	57
25,	104	116	190	29	20	1	1	14	2	17	449	50
26,	97	107	592	36	25	2	1	10	2	24	363	57
27,	82	90	931	39	18	4	1	8	1	27	322	66
28,	90	86	1027	43	20	5	1	13	1	24	235	80
29,	96	---	783	49	16	4	1	12	1	12	194	38
30,	99	---	783	49	15	2	1	5	1	244	147	30
31,	89	---	850	---	12	---	1	8	---	202	---	65

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1886.	JAN	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1.	278	172	169	2523	32	29	24	17	3	2	15	62
2,	112	137	159	647	21	25	19	21	1	4	12	46
3,	83	113	149	198	17	27	20	18	5	4	14	50
4,	833	146	139	149	26	36	10	12	2	3	12	110
5,	3352	138	130	222	23	37	17	11	1	1	8	104
6,	720	132	95	3692	26	24	15	9	2	1	13	63
7,	148	126	55	2320	24	28	12	15	1	2	9	88
8,	113	120	50	1085	2121	19	10	18	1	3	9	68
9.	105	114	44	428	1746	18	9	22	3	2	7	63
10	182	95	42	239	348	22	14	16	2	1	9	86
11,	207	4060	41	160	159	42	19	11	1	1	10	55
12,	258	5359	38	150	117	32	21	7	5	3	9	23
13,	236	5404	46	285	649	25	19	8	4	2	28	34
14	176	2299	42	283	1319	176	16	10	5	1	30	252
15,	110	1392	45	130	313	482	16	7	5	2	33	283
16.	149	836	41	85	673	181	256	5	2	2	28	156
17,	150	207	38	72	283	95	378	6	2	1	21	225
18,	150	142	35	52	136	72	132	6	2	2	166	372
19.	227	149	43	50	116	39	275	7	2	1	413	1016
20,	372	136	46	43	125	26	83	6	2	5	96	710
21,	110	107	2061	43	140	26	51	3	5	1	42	230
22	171	140	1088	32	117	22	52	4	5	1	31	148
23,	223	91	308	26	237	1030	40	3	3	2	446	99
24.	163	87	146	31	140	825	26	4	2	1	621	148
25,	311	1123	125	37	115	210	20	3	1	2	756	985
26.	197	2108	101	35	94	128	366	6	1	4	2064	336
27,	117	324	100	35	77	81	100	6	2	8	257	189
28.	679	231	783	34	81	54	36	8	1	15	107	103
29,	984	----------	948	32	67	38	28	7	3	17	73	142
30,	908	----------	2150	24	43	28	25	3	1	12	61	144
31.	200	----------	2598	----------	41	----------	25	2	----------	15	----------	175

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1887.	JAN	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	330	205	246	106	57	188	18	1148	20	18	24	25
2,	400	109	155	101	49	161	12	196	18	20	18	33
3,	300	107	152	132	39	148	10	279	16	25	16	24
4,	220	127	121	153	38	90	11	86	14	26	18	24
5,	150	155	96	142	36	50	434	52	15	22	14	20
6,	180	136	86	101	29	40	1858	85	13	22	15	24
7,	130	438	180	73	244	35	419	116	13	14	9	35
8,	120	884	816	61	669	44	149	68	10	16	14	35
9,	100	838	736	54	508	38	82	46	11	11	15	30
10	110	531	1149	44	195	34	79	24	11	14	13	70
11,	130	770	612	49	118	25	68	22	10	14	20	1201
12,	115	623	210	46	73	17	43	39	180	13	18	639
13,	110	275	159	40	58	23	35	39	349	14	18	470
14,	720	168	145	33	43	20	23	22	111	13	16	114
15,	744	425	109	33	31	14	15	24	59	11	22	428
16,	416	644	83	33	37	11	14	18	41	9	20	708
17,	252	329	66	24	34	14	70	21	31	7	20	205
18,	236	1581	51	40	26	13	63	19	18	11	16	75
19	145	2357	50	162	20	9	40	16	21	10	22	131
20,	113	463	48	312	20	25	29	22	15	10	47	137
21,	110	252	59	131	18	27	22	19	19	90	79	184
22	175	332	125	83	15	23	19	23	15	75	49	291
23,	523	375	275	67	20	1483	78	166	17	54	35	320
24,	2544	641	284	113	31	446	335	1883	14	35	28	234
25,	1112	466	945	96	45	139	284	549	10	25	27	177
26,	602	166	884	184	32	63	106	151	12	22	27	187
27,	214	613	351	147	24	46	57	89	14	19	19	158
28,	202	466	1538	88	17	30	42	47	19	17	21	701
29,	1473		540	100	31	25	30	36	25	22	27	1139
30,	1542		176	92	19	23	26	27	20	14	30	652
31	415		144				36	23		21		306

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKO N CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1888.	JAN	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	3190	150	122	318	37	43	11	8	21	38	94	144
2,	3492	150	120	235	32	33	7	8	18	40	80	294
3,	683	116	130	189	31	22	9	7	20	37	76	275
4,	294	109	164	131	28	27	4	11	17	35	71	81
5,	217	201	154	692	28	27	11	16	21	32	65	81
6,	154	446	125	2019	28	22	3	22	19	72	60	83
7.	198	712	106	1790	29	25	3	14	9	265	51	87
8,	669	671	85	911	31	17	7	47	10	199	49	83
9.	514	608	83	135	33	12	4	48	25	99	67	172
10.	237	521	79	780	34	14	8	11	111	47	336	262
11,	143	401	100	1797	39	18	8	11	199	36	494	159
12,	151	253	908	435	89	20	6	26	604	38	173	115
13,	188	208	123	237	92	22	11	34	337	41	98	84
14,	280	190	750	382	78	27	7	29	165	42	81	71
15,	234	122	473	344	70	17	3	23	87	42	1130	71
16,	334	104	380	254	63	6	3	15	103	43	982	63
17,	606	118	570	291	51	6	8	18	1351	43	333	2374
18,	714	127	620	150	45	4	4	15	5546	39	237	2689
19,	647	352	494	113	45	8	8	11	1991	39	935	434
20	590	1377	950	103	52	8	2	4	270	53	864	148
21.	590	2768	2659	86	47	9	2	392	2710	62	311	133
22	369	1751	1886	68	36	12	8	3489	472	56	175	176
23,	350	890	594	61	34	9	7	333	191	48	131	205
24,	210	828	253	52	35	6	8	92	117	82	132	117
25,	185	2188	151	44	39	8	5	52	84	110	132	72
26.	226	1650	173	41	38	8	5	30	75	82	214	72
27,	242	661	1633	38	35	3	6	25	73	491	423	345
28,	405	526	938	33	37	7	11	24	60	993	401	337
29,	120	277	1330	32	63	10	10	19	41	694	212	198
30,	86	----------	630	36	78	13	9	15	36	239	169	111
31.	289	----------	460	----------	57	----------	9	17	----------	131	----------	91

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1889.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	86	124	36	295	135	340	210	2602	17	63	139	151
2,	87	99	52	958	101	441	939	815	16	68	131	120
3,	77	92	386	330	79	156	1482	367	17	62	1041	111
4,	72	86	2567	183	71	82	1053	195	15	49	813	103
5,	124	82	2141	133	63	64	697	211	20	46	263	85
6,	968	71	864	103	54	52	574	194	11	42	166	75
7,	637	89	320	83	48	45	123	119	9	35	131	75
8,	263	125	195	78	43	39	80	84	11	33	116	136
9	691	148	134	75	42	32	54	66	11	31	3394	351
10	1080	88	108	66	36	31	38	62	14	39	2308	214
11,	288	61	100	55	43	31	70	55	16	32	406	165
12,	149	60	84	53	40	242	111	51	16	55	233	148
13,	104	60	79	64	40	308	77	83	44	96	963	111
14,	99	61	92	67	44	63	141	2115	160	314	1339	103
15,	87	45	97	64	44	110	2156	2177	155	248	331	248
16	81	70	84	61	38	565	787	406	532	111	166	171
17,	1530	514	75	56	37	263	188	164	2019	68	119	560
18,	742	819	88	54	34	383	82	98	3028	51	102	606
19,	230	683	105	49	16	161	262	69	920	44	1623	337
20,	112	228	113	49	363	82	1975	59	367	43	1041	241
21,	418	143	214	44	911	50	422	49	201	97	508	158
22	397	94	951	42	450	39	139	41	163	129	816	119
23,	263	66	623	71	186	33	88	37	115	104	302	106
24,	211	51	266	54	95	28	69	39	85	97	163	92
25,	258	74	158	29	68	29	48	33	459	72	457	74
26,	313	73	114	424	68	807	41	35	524	57	557	150
27,	778	45	97	2126	357	610	58	37	260	2958	724	225
28,	1096	37	112	1439	744	214	65	33	140	1648	2768	100
29,	440	----------	124	582	244	368	91	22	93	392	645	75
30,	187	----------	104	241	118	215	844	19	70	194	234	69
31.	191	----------	87	----------	80	----------	4714	20	----------	147	----------	55

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1890.	JAN	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	51	114	766	176	41	51	14	22	34	23	75	28
2,	53	84	349	197	34	50	125	17	30	18	64	35
3,	57	95	124	126	34	83	436	12	27	810	52	62
4,	51	155	92	378	24	33	687	15	21	783	48	87
5,	62	239	87	721	461	37	147	18	17	194	48	87
6,	98	131	83	191	282	38	71	53	18	96	42	74
7,	102	75	71	143	297	107	47	32	12	294	38	74
8,	87	2512	71	182	153	66	36	27	14	281	37	140
9,	76	2000	64	778	115	41	45	25	12	163	35	134
10	57	293	71	758	78	32	23	21	17	91	37	60
11	48	176	563	241	60	22	18	16	10	67	45	44
12,	45	141	978	128	53	91	12	22	15	49	107	45
13,	49	117	440	99	47	485	12	19	97	25	89	142
14,	45	420	1182	84	117	352	12	14	438	54	63	141
15,	1110	806	1993	68	1037	118	16	13	612	75	48	51
16,	1586	192	588	61	480	65	18	11	797	73	43	64
17,	422	124	228	54	146	46	19	10	624	935	112	243
18,	160	107	166	48	88	38	20	14	179	405	249	1044
19,	108	94	132	48	65	36	17	27	81	143	100	239
20,	169	693	151	42	214	31	12	478	43	118	89	154
21,	265	414	1290	36	292	31	12	290	32	104	64	121
22	109	146	2942	42	117	34	11	130	32	79	54	90
23,	120	107	1908	44	70	35	4	159	32	469	85	88
24	109	115	422	39	53	44	9	57	22	2624	82	68
25,	78	186	214	36	42	42	11	38	24	944	41	80
26,	50	219	436	42	1278	27	317	86	24	358	31	178
27,	62	154	264	51	1967	20	122	405	27	183	26	193
28,	71	482	1695	56	416	17	68	261	23	122	21	191
29,	64	--------	919	50	154	15	43	95	23	103	83	106
30,	97	--------	206	43	92	25	34	119	22	128	27	73
31,	160	--------	161	--------	67	--------	29	45	--------	115	--------	68

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1891.	JAN	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1	61	1726	202	125	24	19	8	172	276	10	27	56
2	1397	1105	148	178	20	18	7	91	123	11	30	38
3,	1421	779	110	814	21	13	8	60	92	10	20	33
4,	243	614	85	406	61	11	7	38	78	8	17	681
5,	150	213	93	178	51	12	7	31	326	15	17	1418
6.	116	180	93	125	40	13	6	31	598	15	18	330
7,	148	210	82	104	34	12	6	31	249	11	21	915
8,	104	637	116	91	33	14	5	31	116	20	16	464
9,	85	516	713	77	29	26	13	23	68	16	7	231
10.	57	972	1500	68	22	24	9	21	53	10	16	129
11,	767	386	601	118	25	15	12	16	49	9	20	99
12,	2331	204	718	797	25	13	5	19	49	11	29	82
13,	354	152	1184	273	15	12	4	16	42	18	27	73
14,	179	130	627	133	18	7	7	14	36	12	29	69
15,	127	97	238	102	18	14	3	43	30	10	24	63
16.	94	975	158	82	24	12	7	47	23	10	21	60
17,	185	782	228	75	20	26	3	54	26	7	58	68
18,	748	820	113	73	27	15	34	587	31	18	136	74
19.	267	663	97	62	29	16	299	672	24	5	98	71
20,	188	241	255	51	27	35	120	167	67	95	61	46
21.	141	751	2858	45	21	23	62	77	67	70	46	39
22	2451	1071	1219	45	23	30	41	57	18	127	42	41
23,	1146	383	1004	45	18	28	28	214	18	212	128	410
24,	364	190	506	51	16	23	29	3159	18	100	386	1670
25.	250	248	241	49	12	22	31	2700	13	52	108	1400
26.	250	418	158	38	20	14	25	516	13	86	84	668
27,	234	405	119	32	19	21	23	237	13	93	75	819
28.	204	272	105	28	21	17	17	596	15	49	65	291
29,	466		95	28	16	6	571	357	15	39	54	184
30,	1269		79	27	20	9	611	345	7	33	59	887
31,	1091		79		16		515	415		29		351

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1892.	JAN	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	148	157	1645	113	40	76	59	21	20	15	8	160
2,	1090	145	831	100	47	60	46	37	16	8	9	98
3,	1177	205	433	100	159	43	249	31	12	11	8	71
4.	262	237	348	105	108	45	455	33	10	14	6	62
5,	158	180	283	95	70	64	164	21	15	17	9	59
6,	108	140	218	86	60	73	78	24	19	14	9	57
7,	120	134	237	73	55	58	44	9	13	7	6	49
8,	156	119	1421	61	57	43	31	15	13	8	7	157
9,	150	175	1447	57	51	90	26	15	16	7	8	380
10.	122	129	625	47	43	555	20	15	12	9	57	118
11,	100	102	390	49	39	287	19	16	5	11	301	105
12,	79	57	207	37	42	108	18	57	9	14	113	78
13,	2863	71	130	35	39	61	16	101	10	11	64	54
14,	3158	79	97	33	39	46	17	38	13	6	48	283
15,	2580	72	84	133	143	41	14	28	17	8	803	623
16,	660	77	68	177	125	32	12	23	13	8	2962	300
17,	260	86	66	90	86	31	10	13	15	6	522	158
18,	261	74	86	57	57	29	11	14	12	8	669	119
19,	1618	53	87	42	55	17	12	11	16	6	896	97
20,	880	35	65	35	340	22	7	9	17	7	509	80
21,	352	73	65	44	401	23	6	11	27	4	370	85
22	161	109	65	95	529	15	5	10	11	8	88	74
23,	146	112	65	191	458	15	8	10	18	5	64	85
24.	131	105	271	131	250	17	9	8	25	4	51	125
25,	121	92	727	71	177	16	8	9	13	4	48	184
26.	119	156	574	57	132	20	8	12	227	6	40	246
27,	129	190	1036	46	1333	26	5	80	59	11	35	154
28	193	121	1115	46	522	21	5	92	33	10	180	201
29,	277	87	413	50	184	14	8	75	22	6	676	168
30,	226	----------	194	50	112	14	9	30	19	5	195	103
31.	166	----------	135	----------	86	----------	12	30	----------	5	----------	68

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1893.	JAN	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	474	489	78	78	279	35	16	8	49	11	51	122
2,	1406	803	97	68	348	33	15	12	41	11	48	102
3,	301	1366	108	51	832	21	15	9	32	15	48	191
4,	138	1118	108	58	2994	20	25	4	25	12	1094	1420
5,	104	948	108	50	1102	19	12	3	21	10	1288	478
6,	100	1166	103	41	872	37	13	9	17	12	489	197
7,	131	1113	87	49	413	95	12	5	22	17	184	171
8,	140	742	103	140	207	53	12	4	35	12	123	141
9,	140	320	985	145	124	39	9	10	21	10	101	137
10.	160	2597	2200	132	89	37	9	5	13	12	79	141
11,	204	1735	800	249	81	32	11	4	18	11	71	215
12,	160	437	2400	156	71	21	9	6	23	11	62	142
13,	236	462	856	106	62	37	6	5	13	12	54	101
14,	203	846	575	358	58	14	6	6	15	30	60	153
15,	138	905	600	1687	65	13	12	3	26	47	103	186
16.	165	1113	380	701	330	17	12	3	834	49	130	1260
17,	170	672	251	238	919	16	12	3	531	39	90	1593
18,	118	248	191	165	613	15	13	3	131	31	60	383
19.	95	237	165	135	301	13	9	4	75	22	53	178
20,	63	201	162	515	87	9	7	345	55	20	48	132
21,	64	162	197	1903	71	9	5	409	55	23	46	117
22	72	136	246	448	57	170	6	79	54	15	496	97
23,	105	114	266	185	54	217	6	36	34	39	312	79
24.	93	92	295	135	49	58	4	1814	16	68	120	89
25,	61	87	318	102	46	25	3	503	25	59	81	131
26,	59	87	254	97	42	42	3	119	27	46	62	143
27,	65	87	158	237	40	38	4	58	17	79	55	109
28.	53	73	114	289	33	25	7	44	18	506	1244	82
29,	83		97	160	31	21	9	499	20	279	479	81
30,	312		92	118	33	21	7	198	17	116	188	83
31	511		83		33		4	92		66		75

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1894.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	73	125	216	64	47	267	20	7	4	13	522	37
2,	76	113	148	62	41	189	16	6	4	16	189	242
3,	75	89	297	62	35	142	12	8	3	11	1193	430
4,	61	65	790	54	33	125	10	25	3	12	707	163
5,	74	88	1065	254	34	91	12	30	2	13	719	97
6,	114	119	1174	141	34	75	29	24	2	11	966	73
7,	131	156	1102	92	58	64	47	35	3	7	282	58
8,	109	115	488	79	53	61	31	18	4	9	545	126
9,	87	651	258	71	50	49	22	8	5	12	439	606
10	70	1113	220	73	42	40	17	5	20	1674	224	284
11,	52	911	188	73	28	34	16	5	31	885	168	635
12,	46	383	153	128	29	27	11	5	33	127	115	3342
13,	46	140	131	1168	16	23	7	5	25	125	83	1811
14,	49	140	109	1283	17	23	10	6	23	186	71	377
15,	49	119	92	800	19	20	7	6	20	116	61	195
16,	64	107	102	223	17	19	3	8	21	68	65	148
17,	64	113	93	144	17	15	6	8	23	47	79	119
18,	51	928	71	103	16	15	10	11	3510	39	104	97
19,	51	1606	67	79	17	14	8	11	3556	34	104	83
20,	46	1257	64	71	616	10	6	8	1306	32	73	75
21.	41	723	61	71	8650	12	11	8	245	27	73	66
22	43	379	71	303	4310	7	68	9	83	23	97	61
23,	45	208	534	321	904	7	49	9	50	21	93	58
24.	51	118	351	132	1827	6	25	9	41	29	75	57
25,	89	151	143	101	1577	13	21	10	29	725	63	46
26,	98	151	122	81	450	36	14	6	23	477	61	42
27,	75	151	100	68	228	29	10	6	19	168	49	44
28.	68	231	76	70	1386	26	8	11	20	99	44	83
29,	68		70	58	2252	19	5	4	36	67	46	109
30,	107		79	47	506	19	4	4	28	52	39	143
31,	137		79		267		6	4		649		113

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1895.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	62	138	1296	122	107	36	61	7	4	3	15	22
2,	62	156	1064	117	86	33	96	6	3	3	23	54
3,	80	180	706	210	157	39	61	8	5	3	23	176
4,	89	163	495	239	47	32	57	310	6	3	29	86
5,	127	119	352	131	42	26	579	145	2	2	16	51
6,	50	193	248	99	39	57	648	29	4	3	22	38
7,	381	104	197	89	40	58	240	16	5	3	21	25
8,	628	71	1116	1404	87	47	100	9	6	3	17	20
9,	418	54	943	3857	35	26	54	12	4	4	12	18
10	498	92	494	1760	35	29	35	10	3	3	10	20
11,	2942	168	451	616	31	23	27	9	3	3	9	18
12,	1109	168	317	146	25	20	21	229	3	5	15	14
13,	262	108	383	1131	29	28	18	41	3	15	13	17
14,	204	92	1519	1191	89	22	12	27	3	26	12	11
15,	146	70	437	528	155	12	15	25	3	27	13	8
16,	146	51	200	271	93	10	18	17	3	25	12	6
17,	169	40	166	117	63	9	12	17	3	19	11	7
18,	169	35	192	88	44	10	11	8	3	14	15	7
19,	112	49	343	75	31	11	10	6	3	14	22	7
20,	80	58	430	62	33	11	8	10	3	11	15	6
21,	88	148	328	51	33	9	8	9	3	5	15	14
22,	79	246	328	49	35	10	25	5	3	7	11	420
23,	89	255	362	47	32	8	20	7	3	8	12	242
24,	107	255	334	43	33	7	14	6	3	7	9	91
25,	107	245	525	41	34	9	12	5	3	6	9	54
26	1632	245	576	41	23	14	11	5	3	6	16	46
27,	515	266	299	42	81	16	11	4	3	6	63	60
28,	184	902	229	59	351	41	9	4	3	5	78	68
29,	141		189	76	120	45	7	5	3	5	38	57
30,	97		132	92	53	50	11	4	3	5	27	64
31,	102		114		50		7	4		8		109

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1896. DAY.	JAN. Dis.	FEB. Dis.	MAR. Dis.	APRIL. Dis.	MAY. Dis.	JUNE. Dis.	JULY. Dis.	AUG. Dis.	SEPT. Dis.	OCT. Dis.	NOV. Dis.	DEC. Dis.
1,	327	55	498	297	20	35	11	113	3	167	23	177
2,	93	90	192	236	23	31	10	56	3	59	19	104
3,	59	83	50	193	18	28	10	35	4	27	20	78
4,	39	58	48	101	21	18	7	27	5	27	22	65
5,	39	138	59	71	26	10	5	17	10	29	1851	59
6,	28	6515	59	72	25	12	13	22	1665	24	1249	51
7,	17	1720	57	81	25	11	16	12	319	20	273	61
8,	16	487	44	85	19	9	38	12	95	17	180	72
9,	13	201	42	72	13	12	13	10	44	10	279	289
10	9	174	44	57	11	11	104	9	29	16	131	242
11,	7	225	35	53	12	9	76	12	23	16	109	98
12,	7	156	40	51	13	7	34	9	14	29	133	71
13,	8	91	51	11	4	4	22	10	10	1130	136	59
14,	13	180	51	51	11	9	15	47	10	430	103	56
15,	13	327	41	40	12	28	10	16	10	215	73	53
16	6	206	71	33	11	20	12	7	16	103	55	44
17,	6	107	77	33	7	24	10	8	21	63	47	52
18,	6	90	54	36	7	28	9	8	328	48	44	57
19.	5	85	2028	25	11	23	6	8	112	38	46	44
20,	5	75	3343	21	12	17	6	9	49	28	42	49
21.	5	75	1205	40	10	8	9	7	35	29	36	51
22	4	70	742	49	14	14	2417	5	23	33	36	42
23,	6	62	449	40	20	16	704	3	19	28	36	44
24,	151	47	193	31	16	11	304	6	20	55	35	44
25,	239	51	98	35	17	15	87	7	13	76	37	35
26,	136	69	371	39	23	21	46	6	11	54	42	39
27,	70	88	596	39	18	18	47	5	8	38	35	39
28,	59	229	311	35	48	10	163	5	8	31	45	39
29,	46	851	2444	26	137	13	184	5	14	31	856	35
30,	28		1238	20	143	15	2182	3	156	30	439	31
31,	31		527		97		110	3		27		27

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1897.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	31	73	58	46	20	70	10	64	17	3	6	86
2,	49	97	65	40	2587	40	9	49	14	3	1400	57
3,	157	79	54	31	954	44	7	43	31	3	616	49
4,	330	65	75	15	376	66	6	38	42	4	131	60
5,	404	49	142	42	207	76	6	103	21	4	63	1765
6,	256	430	523	70	114	71	5	75	17	5	44	670
7,	89	2312	296	71	80	52	4	110	14	5	34	216
8,	71	882	119	56	60	61	5	84	11	6	29	131
9,	65	311	102	1454	47	2389	6	33	11	7	41	97
10,	53	175	135	957	58	906	6	28	11	3	63	79
11,	49	109	152	227	60	240	5	19	10	3	61	65
12,	49	68	191	119	57	111	4	22	10	3	60	338
13,	49	78	210	93	3683	75	6	20	5	3	60	285
14,	49	89	150	75	1987	53	35	15	6	3	42	1751
15,	44	65	147	101	973	50	35	8	7	8	37	3125
16,	31	73	135	160	354	48	22	50	7	9	42	848
17,	23	246	89	137	144	46	14	36	7	5	59	234
18,	80	404	79	109	90	49	879	34	6	3	64	150
19,	117	320	220	74	74	44	230	32	4	6	53	105
20,	133	122	927	54	54	37	177	22	6	3	43	79
21,	1221	203	380	44	61	33	201	16	6	3	32	71
22,	551	329	150	39	73	30	922	12	4	4	33	68
23,	157	659	125	39	56	23	477	17	4	9	33	66
24,	73	397	514	37	62	18	193	745	8	8	33	93
25,	171	151	513	31	128	15	83	123	12	11	35	193
26,	181	111	146	33	124	15	64	69	10	15	36	101
27,	119	87	97	33	57	12	413	42	10	12	1106	119
28,	109	65	76	26	46	14	1817	36	9	12	385	86
29,	87	----------	61	24	35	14	1292	21	5	21	148	76
30,	97	----------	54	19	25	9	321	20	4	9	112	79
31,	73	----------	47	----------	113	----------	116	25	----------	13	----------	79

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1898.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	133	110	82	251	151	65	4	7	7	5	113	364
2,	131	99	67	131	103	53	5	13	7	3	60	271
3,	90	98	70	98	79	44	4	8	7	5	46	201
4,	49	95	79	82	71	35	3	10	8	5	37	1230
5,	49	90	79	80	73	31	5	28	5	5	31	2932
6,	36	89	68	83	109	31	6	96	5	7	31	683
7,	55	87	64	111	404	27	3	44	5	5	27	466
8,	87	80	61	103	2940	14	3	39	14	3	31	139
9,	87	73	53	73	1711	15	3	39	14	4	28	87
10.	87	73	49	65	398	15	3	326	9	6	1503	79
11,	87	65	43	68	229	16	2	574	9	6	1697	71
12,	144	450	43	73	337	15	4	167	7	6	357	65
13,	239	634	47	63	557	15	3	74	7	9	146	53
14,	216	327	43	60	246	20	3	40	7	4	107	49
15,	452	253	39	338	1201	16	3	35	8	6	89	51
16,	696	198	39	289	847	16	5	32	6	8	60	46
17,	251	138	39	154	789	11	5	25	7	8	60	35
18,	107	132	39	89	299	9	6	17	6	17	378	23
19,	87	154	39	71	145	9	5	134	5	23	3451	27
20,	375	4160	39	68	125	9	7	88	4	23	896	472
21,	748	1737	57	64	117	10	17	64	4	24	279	531
22	367	860	376	61	91	9	20	39	6	79	136	237
23,	2890	427	469	53	69	5	13	27	8	70	811	2134
24,	680	231	304	569	297	5	7	23	13	52	518	536
25,	226	159	283	544	573	5	11	21	15	66	283	251
26,	279	115	175	323	767	5	11	22	5	224	210	131
27,	320	97	131	238	495	7	11	14	7	495	185	107
28,	439	97	242	525	266	7	11	6	10	171	194	89
29,	370		393	810	158	4	5	11	9	68	248	79
30,	133		1078	322	119	4	8	11	7	94	341	73
31	259		433		89		8	5		169		114

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1899.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	144	158	793	178	35	15	14	4	18	46	52	34
2,	136	125	600	131	31	9	11	399	13	40	181	34
3,	154	118	601	97	31	9	19	267	9	27	121	44
4	204	151	708	79	31	10	12	113	93	25	921	49
5,	1172	184	2819	68	31	9	10	52	42	23	366	44
6,	1360	210	1109	61	27	8	10	28	28	18	121	39
7,	1400	189	520	73	23	7	8	22	19	20	73	39
8,	503	142	277	1328	23	7	8	17	16	23	58	39
9,	503	180	217	389	23	5	7	15	287	20	53	31
10.	413	183	203	160	20	8	6	254	210	17	40	23
11,	124	110	418	108	28	6	7	417	203	17	35	27
12,	158	90	1225	92	35	6	5	182	499	16	42	44
13,	169	119	1702	87	27	7	7	66	163	13	51	95
14,	186	102	416	79	31	5	11	38	58	11	53	101
15,	311	65	709	70	31	3	9	28	46	10	47	60
16,	432	157	934	153	20	5	5	19	36	9	46	49
17,	569	416	848	393	17	5	7	14	18	9	47	44
18,	488	782	502	144	20	4	7	12	18	9	45	39
19,	258	767	2492	84	23	3	8	11	23	9	38	39
20,	177	695	938	68	20	2	8	8	708	9	34	85
21,	116	914	308	61	17	2	3	8	545	9	33	101
22.	84	1414	1051	58	17	7	5	6	404	9	33	65
23,	79	1582	1006	53	20	2	3	7	239	14	49	53
24,	526	1000	449	49	17	2	3	7	61	16	57	879
25	2032	541	220	49	17	7	3	3	42	18	44	913
26,	392	616	624	45	15	7	4	2	1522	18	35	203
27,	230	3222	633	41	12	12	4	359	604	11	30	97
28	145	1058	779	39	9	5	4	317	158	11	31	79
29,	166	---	1307	39	12	17	6	62	78	10	36	65
30,	169	---	520	39	14	27	7	34	51	12	39	53
31,	184	---	239	---	15	---	4	27	---	17	---	49

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1901.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	23	11	9	81	87	289	5	6	608	11	7	22
2,	31	10	11	77	74	237	5	4	60	19	7	19
3,	35	9	26	812	136	248	4	4	42	38	5	87
4,	31	10	55	795	131	231	4	4	29	52	11	153
5,	31	7	129	268	68	145	4	4	34	40	14	150
6,	31	4	129	276	58	97	4	4	25	25	9	131
7,	27	6	71	535	58	97	4	11	27	21	6	109
8,	20	7	71	307	53	102	4	15	16	16	4	81
9,	17	10	60	136	49	81	4	20	11	11	5	187
10.	40	11	158	98	480	41	4	17	16	9	5	215
11,	1359	8	3353	75	844	15	4	11	19	9	4	125
12,	1768	8	858	65	1219	13	4	9	25	10	7	213
13,	371	9	254	44	351	11	5	12	35	7	8	178
14,	138	9	605	31	184	9	5	9	37	12	7	165
15,	97	11	743	40	183	8	6	7	29	18	7	2843
16,	76	11	358	57	158	8	6	7	27	31	9	1803
17,	64	9	202	57	111	6	6	5	21	31	8	758
18,	44	9	140	51	73	18	6	893	17	18	6	330
19,	23	9	131	52	38	23	5	565	17	18	9	220
20,	23	9	131	283	13	10	5	205	16	14	10	184
21,	27	9	2119	1203	8	7	5	63	16	18	10	158
22	27	9	800	667	7	5	5	278	10	17	10	131
23,	27	9	239	266	11	6	5	336	7	15	10	131
24,	27	9	205	1107	17	7	4	627	9	10	123	131
25,	27	9	246	3388	28	5	3	387	11	7	201	131
26,	31	9	306	636	49	3	3	95	11	10	101	371
27,	24	9	620	239	178	4	4	83	10	10	57	806
28,	15	9	956	166	351	5	5	71	10	6	61	567
29,	14	--------	804	172	461	5	5	29	8	5	45	3817
30,	13	--------	367	140	433	4	6	23	7	7	34	4089
31,	12	--------	129	--------	336	--------	7	17	--------	7	--------	1034

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1902.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	339	206	5958	142	166	10	69	18	3	363	64	107
2,	201	357	551	112	65	7	51	20	2	351	55	136
3,	135	584	460	78	65	7	40	20	4	214	51	1359
4,	87	708	348	58	73	5	34	12	4	114	48	430
5,	87	528	175	50	61	5	26	16	3	1227	45	274
6,	87	266	185	96	47	3	21	13	3	1500	41	215
7,	87	184	212	297	35	3	19	17	2	430	41	148
8,	79	157	153	1523	31	4	19	12	2	162	39	124
9,	71	109	1089	1772	27	5	16	7	13	92	94	107
10.	71	102	1977	589	23	6	9	6	6	68	94	107
11,	71	102	1280	286	20	5	11	12	8	612	32	68
12,	71	79	775	133	22	3	13	37	6	2616	30	102
13,	64	71	741	96	22	4	6	37	6	909	31	103
14,	58	71	539	83	18	10	8	27	6	227	29	119
15,	53	55	246	67	17	10	9	17	4	119	32	119
16,	48	34	291	56	17	8	9	15	7	87	30	2505
17,	48	26	1197	48	17	12	9	14	6	70	26	3367
18,	43	23	488	45	12	12	5	12	5	57	26	1024
19,	39	17	159	43	15	10	3	17	6	50	23	444
20,	39	10	110	38	20	9	4	15	5	48	22	429
21,	614	34	98	35	12	7	7	11	4	48	21	1999
22.	2969	710	88	34	9	18	33	11	4	41	22	4260
23,	407	675	80	31	9	6	26	12	5	36	88	1854
24.	124	642	72	27	9	8	260	8	5	39	92	353
25,	82	582	60	20	7	9	515	8	7	34	31	147
26,	59	3406	49	16	7	19	180	8	1129	26	337	54
27,	300	2419	48	16	10	24	81	4	2291	23	435	75
28,	114	5216	85	20	12	23	44	4	1536	1304	189	84
29,	131	----------	996	23	14	45	39	4	734	526	94	205
30,	102	----------	772	251	9	110	37	3	830	189	71	337
31.	137	----------	226	----------	12	----------	23	3	----------	97	----------	157

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1903.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	170	223	1594	240	27	4	80	44	84	11	22	23
2	323	162	526	115	28	5	72	23	62	11	21	25
3,	1889	92	181	83	21	5	71	20	49	9	21	56
4,	993	1940	138	440	22	4	48	31	58	10	22	64
5,	504	1186	116	402	36	3	66	136	340	5	24	35
6,	308	265	105	135	36	3	32	115	224	9	28	30
7,	172	230	87	152	32	3	24	112	73	7	27	50
8,	135	220	341	1395	29	16	15	73	49	619	21	55
9,	120	223	670	1253	24	34	14	52	40	4968	22	39
10.	131	143	465	333	16	70	11	43	35	2402	20	39
11,	598	229	419	386	21	290	11	41	34	203	21	44
12,	610	920	345	450	24	640	10	36	32	404	24	60
13,	144	356	157	266	17	345	12	26	21	240	23	649
14,	131	250	114	1571	15	108	13	29	20	107	23	756
15,	119	185	92	2260	15	76	10	28	11	76	18	313
16	107	456	86	908	12	59	8	15	28	59	16	129
17,	107	531	78	392	7	40	5	24	131	60	41	95
18,	107	203	67	184	8	33	302	16	142	79	243	100
19.	107	194	64	115	12	31	1132	21	61	79	141	124
20,	131	134	61	84	11	40	1115	18	42	62	63	1435
21.	1078	112	88	72	9	637	1766	10	30	46	42	1857
22	812	106	659	59	7	259	547	10	29	38	33	383
23,	240	100	2204	53	8	181	320	8	30	38	32	178
24,	120	97	1774	50	6	468	117	8	23	43	29	125
25,	85	87	480	46	5	214	59	10	14	42	27	97
26,	72	87	172	45	6	105	43	7	11	33	31	97
27,	68	171	102	47	5	65	29	5	10	30	31	97
28,	645	3498	79	41	4	46	20	171	8	31	27	97
29,	808		73	32	4	304	22	897	9	29	20	97
30,	773		183	28	6	163	281	303	10	27	20	92
31.	328		695		5		168	149		25		87

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1904.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	128	111	247	1494	68	358	26	27	17	46	33	38
2,	162	107	357	1215	61	255	29	76	15	38	27	32
3,	162	108	490	304	49	297	23	110	15	31	26	31
4,	169	110	458	166	35	238	12	75	10	35	31	31
5,	177	111	183	111	31	600	11	45	9	27	27	31
6,	169	99	81	85	31	482	12	87	12	21	23	31
7,	154	453	1616	104	27	1119	12	38	10	18	23	31
8,	154	685	1736	133	21	422	151	19	10	16	23	31
9,	154	190	447	270	21	157	74	18	12	14	26	27
10,	154	89	203	307	23	94	81	384	11	15	28	23
11,	142	65	111	173	20	67	79	1415	7	17	30	23
12,	131	58	74	169	23	56	157	398	4	217	36	23
13,	295	56	67	89	23	44	265	106	10	199	63	20
14,	782	51	58	68	15	33	74	1331	1459	106	417	17
15,	1104	49	55	59	22	23	40	593	4395	61	440	17
16,	1144	49	112	49	35	24	28	138	868	45	487	20
17,	798	49	153	44	34	23	23	72	404	39	460	23
18,	454	49	344	42	27	18	19	42	99	35	226	23
19,	241	36	595	39	26	13	20	31	58	29	148	83
20,	158	23	740	39	22	15	26	517	41	33	148	125
21,	131	23	318	35	16	15	33	749	32	2004	154	69
22	489	2090	343	31	14	19	31	286	31	1035	126	31
23,	3133	632	425	27	17	47	26	184	31	261	90	31
24,	1098	272	301	23	15	37	20	119	31	124	76	51
25,	232	218	127	22	10	21	18	59	25	78	67	71
26,	175	128	341	30	10	15	39	43	19	60	58	71
27,	155	76	322	66	9	13	31	34	21	53	45	238
28,	144	39	151	112	8	13	27	26	23	41	44	556
29,	132	173	104	109	7	16	77	27	18	36	49	431
30,	120		82	79	18	25	44	25	49	38	44	154
31,	116		334		715		30	20		36		113

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1905.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	79	58	53	73	26	8	5	6	27	16	34	313
2.	120	58	43	61	26	7	9	4	18	21	34	223
3,	154	58	36	54	23	4	7	5	224	26	23	869
4,	154	72	39	51	23	7	9	5	911	32	21	820
5,	186	79	35	317	23	5	8	6	606	35	25	224
6,	278	64	32	764	23	12	5	5	152	29	26	112
7,	4174	58	33	307	20	9	3	4	68	23	24	84
8,	952	58	126	122	17	8	5	17	44	15	23	73
9,	255	58	605	84	15	12	3	31	39	16	23	67
10	193	58	1568	83	14	11	2	34	28	21	24	92
11,	119	58	934	129	14	5	2	28	46	12	16	104
12,	398	58	841	169	14	3	6	19	1129	158	14	76
13,	485	58	721	138	11	7	3	11	423	128	21	59
14,	220	58	675	91	15	11	4	14	120	51	15	50
15,	145	58	636	75	15	10	5	1237	60	31	19	48
16,	111	58	767	68	20	9	5	3353	45	29	15	43
17,	89	58	996	57	11	9	3	376	26	24	16	39
18,	87	58	1776	50	10	6	2	109	93	21	17	39
19	87	58	2657	46	25	4	3	52	229	20	14	32
20,	75	72	1611	40	26	5	3	34	181	817	9	24
21,	64	79	2302	42	18	5	2	28	392	573	16	1061
22	61	64	1271	48	17	5	2	24	166	162	14	652
23,	58	58	662	44	18	14	11	18	72	82	12	318
24,	58	58	482	35	10	21	3	15	46	56	11	226
25,	58	58	1189	32	10	12	2	623	39	51	14	98
26,	58	58	611	36	8	12	3	742	34	53	13	82
27,	58	58	434	43	8	13	5	176	28	58	8	69
28,	58	58	511	40	7	7	4	72	21	48	16	64
29,	72	----------	132	35	5	7	5	41	21	39	2167	310
30,	87	----------	104	30	6	5	36	30	20	36	1206	374
31,	72	----------	87	----------	10	----------	14	26	----------	32	----------	137

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1906.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	76	79	109	368	39	50	16	26	15	4	324	31
2,	58	58	76	157	27	39	18	22	10	5	136	21
3,	80	61	1558	106	27	24	27	25	7	7	60	26
4,	1359	75	2934	80	26	20	611	723	9	5	44	23
5,	702	71	658	72	22	21	157	268	5	138	35	26
6,	232	71	210	69	20	18	64	57	10	46	31	32
7,	111	71	148	66	25	19	42	32	11	32	26	101
8,	76	71	154	59	27	21	32	22	7	23	22	60
9,	76	71	168	664	29	14	32	25	6	18	23	61
10,	111	79	142	3196	33	10	26	29	3	13	19	52
11,	170	79	104	719	31	14	13	28	4	12	14	201
12,	206	71	84	291	28	17	13	22	3	10	48	109
13,	201	64	76	155	18	13	13	20	6	10	38	52
14,	250	124	68	80	13	11	12	21	3	8	36	68
15,	272	182	59	1720	22	10	11	16	5	9	30	49
16,	510	141	65	1210	19	8	10	10	5	9	36	73
17,	506	97	71	338	15	7	14	10	3	6	42	448
18,	210	76	66	130	15	268	22	10	3	8	473	427
19,	168	71	57	102	17	1002	20	6	4	8	824	122
20,	134	448	60	79	13	460	12	6	6	25	360	337
21,	138	978	71	64	11	54	9	8	5	76	146	822
22,	172	1763	61	55	10	87	5	14	4	103	89	527
23,	166	447	55	52	10	84	8	36	4	78	64	226
24,	476	254	51	51	9	64	8	21	4	53	53	49
25,	230	390	44	50	[illegible]	49	9	12	7	78	44	49
26,	102	426	55	44	7	43	9	9	4	112	39	49
27,	77	163	1303	40	20	30	6	13	5	83	39	49
28,	204	101	2689	39	223	22	8	22	5	42	35	49
29,	238		956	30	944	18	8	25	4	33	31	60
30,	110		394	34	301	19	45	22	4	31	31	68
31,	85		599		75		34	15		39		1863

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1907.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	2074	273	26	54	62	26	141	8	6	232	79	87
2,	496	404	30	50	69	1041	82	5	5	107	332	78
3,	288	404	646	49	57	454	164	4	5	72	1350	71
4,	684	404	860	42	249	198	82	3	5	66	319	61
5,	566	294	858	35	207	188	44	6	35	75	354	76
6,	209	184	692	35	96	102	29	6	38	66	386	82
7,	106	184	542	35	67	70	22	5	21	50	1760	75
8,	108	184	475	117	64	46	17	6	8	1386	650	71
9,	293	151	536	236	96	39	17	14	11	482	215	69
10	119	108	652	245	100	37	17	16	13	188	475	1706
11,	93	84	659	114	90	33	24	6	20	106	528	1692
12,	749	71	554	79	89	30	31	8	109	85	210	533
13,	782	71	732	65	65	26	28	8	86	70	120	136
14,	855	71	2231	58	53	27	21	4	32	56	88	176
15,	840	71	2975	54	49	31	20	5	18	45	70	816
16,	338	71	2710	46	154	24	18	7	11	35	62	950
17,	106	71	1732	42	552	26	11	6	13	35	55	488
18,	106	71	1436	43	194	27	13	4	11	37	72	226
19,	148	71	736	44	92	21	14	3	11	36	718	126
20,	680	79	1469	45	74	23	65	4	15	30	320	104
21,	730	97	744	48	62	77	94	5	18	23	278	97
22	193	97	446	39	49	73	51	6	18	23	445	79
23,	131	87	352	37	46	73	25	6	1530	23	279	2553
24,	131	72	258	1420	40	74	18	6	2902	23	859	1490
25,	124	53	126	431	35	14	12	15	532	23	1514	292
26,	118	40	120	130	82	14	9	27	162	23	920	195
27,	118	31	93	93	37	16	9	27	69	23	388	140
28,	130	27	83	68	40	16	6	18	674	2640	218	116
29,	131	----------	79	58	83	18	6	11	4118	1858	146	102
30,	131	----------	64	53	29	136	9	7	1027	660	106	267
31,	136	----------	58	----------	22	----------	10	6	----------	190	----------	515

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1908.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	186	748	104	102	171	114	10	11	13	14	26	13
2,	108	413	75	139	104	52	9	6	8	10	21	12
3,	92	158	80	128	54	40	11	7	6	10	20	11
4,	97	102	83	79	41	36	10	9	5	6	17	10
5,	107	64	71	58	40	30	10	6	7	12	19	11
6,	107	56	58	44	40	22	16	8	6	12	18	9
7,	712	54	359	44	1382	14	14	12	6	6	16	182
8,	748	53	596	76	1381	19	9	10	7	7	12	205
9,	262	53	877	171	648	21	8	7	6	7	8	72
10.	109	53	345	94	348	13	6	8	6	6	9	53
11,	97	48	186	74	204	11	8	10	8	4	8	42
12,	1234	44	186	61	105	11	6	6	7	6	7	56
13,	1696	44	218	45	68	13	4	6	4	10	8	71
14,	439	515	218	46	61	10	7	7	3	4	6	59
15,	189	2773	392	48	1074	15	7	6	3	2	5	41
16,	136	1868	421	151	1011	162	7	5	5	4	11	30
17,	105	308	204	62	302	138	6	6	6	4	12	31
18,	83	102	715	47	309	45	5	9	3	4	8	40
19,	79	562	2259	51	104	33	6	5	4	4	9	60
20,	71	802	639	61	162	26	6	5	4	8	15	63
21,	65	464	234	62	179	15	6	5	3	8	22	64
22.	58	212	144	52	337	15	6	3	2	3	23	54
23,	58	112	186	43	223	20	8	3	3	4	23	48
24	58	102	326	37	162	18	7	3	4	5	21	53
25,	58	97	220	38	88	15	17	3	2	4	22	53
26,	58	2262	120	33	58	16	160	34	2	51	22	42
27,	118	1156	92	31	46	18	83	42	4	166	18	33
28,	198	336	97	35	40	12	37	14	5	267	17	37
29,	138	142	138	35	36	10	26	12	13	250	12	36
30,	58	----------	138	42	228	13	20	9	21	80	10	28
31,	58	----------	101	----------	293	----------	13	12	----------	42	----------	36

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1909.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	42	56	102	87	368	29	9	4	2	3	4	26
2,	40	49	339	62	432	31	12	4	2	3	8	18
3,	33	49	302	64	258	27	13	4	2	2	9	16
4,	35	49	216	68	134	25	8	5	2	3	6	12
5,	1423	58	122	56	90	30	6	7	2	3	7	8
6,	2384	65	116	47	73	34	7	3	2	3	7	8
7,	495	89	130	45	98	35	6	4	2	6	5	9
8,	124	82	358	44	142	27	6	3	2	4	7	9
9,	98	53	610	36	120	25	6	3	2	3	7	9
10.	59	873	788	25	80	27	6	2	2	2	5	9
11,	59	810	600	24	86	30	5	2	3	3	6	9
12,	56	201	106	24	77	28	4	3	3	4	12	7
13,	46	156	150	27	52	25	4	3	3	6	11	793
14,	44	86	176	513	46	25	4	3	3	5	4	2824
15,	46	393	146	1247	38	25	4	3	3	3	4	388
16,	53	1376	91	374	30	21	5	4	3	2	5	142
17,	72	1145	67	154	30	18	9	8	2	2	8	79
18,	87	288	54	103	31	488	9	7	2	2	8	66
19,	87	398	49	79	31	140	6	4	6	3	9	47
20,	87	1140	34	1108	24	64	5	4	3	3	7	30
21,	87	2088	36	982	20	40	5	6	3	6	4	30
22.	72	262	44	846	70	28	6	6	3	4	3	31
23,	106	640	39	578	164	25	10	4	3	4	10	30
24.	336	3048	39	432	74	25	12	3	3	7	6	27
25,	580	1392	621	198	53	21	11	3	2	4	22	21
26.	470	306	810	114	40	67	7	3	2	3	34	18
27,	241	162	220	86	35	112	9	3	3	5	16	14
28,	136	128	198	77	107	62	7	4	2	5	28	12
29,	73	--------	193	79	127	14	5	5	6	3	35	13
30,	58	--------	224	724	61	11	6	3	6	4	37	14
31.	61	--------	112	--------	42	--------	6	2	--------	4	--------	13

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1910.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	11	95	3064	20	216	21	12	2	204	4	11	37
2,	9	74	2367	19	103	18	11	2	193	4	8	33
3,	9	64	1520	20	76	17	7	2	268	4	10	33
4,	8	64	875	20	86	19	9	2	490	7	967	31
5,	7	62	354	25	78	16	10	3	318	4	1518	31
6,	21	61	279	28	57	18	8	3	82	3	374	33
7,	412	61	392	25	44	25	8	5	226	3	136	33
8,	866	61	260	23	40	18	8	3	108	7	74	33
9,	1090	61	145	23	49	20	6	15	53	4	55	33
10,	1113	61	108	18	56	24	4	34	37	5	43	31
11,	956	107	88	20	49	116	4	458	26	9	37	24
12,	788	154	72	22	40	1124	5	126	21	2	30	20
13,	669	136	66	20	35	532	4	48	20	5	28	21
14,	643	102	66	17	29	150	4	32	16	3	33	20
15,	650	74	60	13	23	91	4	28	13	4	33	18
16,	596	88	53	11	21	79	4	19	30	4	35	14
17,	571	462	47	11	22	166	3	14	18	3	28	13
18,	600	686	43	828	23	389	3	24	9	4	22	11
19,	1442	586	44	687	24	151	3	14	16	10	22	10
20,	1620	360	44	416	28	79	3	12	14	11	22	9
21,	1882	1624	50	212	31	48	3	10	15	6	20	8
22,	3369	2607	51	140	44	31	3	11	13	13	21	8
23,	1664	1498	43	95	56	26	2	14	8	10	24	8
24,	594	849	30	1948	46	24	2	11	8	10	19	782
25,	246	270	25	3550	166	74	3	10	10	13	16	734
26,	160	201	24	1939	188	126	2	11	5	17	13	294
27,	140	541	26	515	117	71	4	6	9	14	9	146
28,	114	2306	27	198	53	18	4	4	9	13	11	90
29,	107	--------	26	136	37	16	3	4	5	12	23	74
30,	107	--------	25	345	32	14	3	8	4	6	37	302
31,	107	--------	22	--------	25	--------	3	4	--------	5	--------	225

DAILY DISCHARGE, IN SECOND-FEET, OF TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY, PA.

1911.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	163	104	118	88	87	38	8	22	1823	34	41	89
2,	874	74	90	68	63	46	7	14	318	1592	38	64
3,	2056	62	70	50	67	39	9	17	110	508	31	59
4,	1150	691	61	87	53	28	11	22	58	131	31	66
5,	300	545	56	716	49	26	7	18	41	74	34	78
6,	153	115	56	564	40	54	7	9	41	56	45	76
7,	119	113	52	248	31	70	11	7	32	178	1000	76
8,	98	98	62	127	31	49	10	8	25	115	338	79
9,	78	72	105	242	32	42	6	8	27	76	134	114
10	136	68	355	300	32	29	7	7	19	51	83	114
11,	92	76	398	164	27	19	9	7	187	55	69	99
12,	65	102	214	100	27	36	7	5	108	64	77	83
13,	114	151	188	80	25	484	6	5	37	56	132	78
14,	310	158	164	85	16	484	7	7	31	42	138	70
15,	486	109	1848	138	21	166	47	11	40	36	368	784
16,	274	87	979	144	29	82	23	20	52	34	486	1218
17,	174	88	356	90	25	49	170	81	55	32	242	792
18,	209	78	160	66	22	37	641	73	39	1128	2480	302
19,	114	105	154	69	18	28	101	8	33	1270	1339	169
20,	62	109	271	1624	14	20	36	5	29	536	264	109
21,	68	109	280	680	10	20	88	4	22	1009	159	87
22	66	114	152	242	11	18	321	6	23	775	117	200
23,	64	92	101	266	17	15	80	6	21	1080	84	1201
24,	84	83	75	196	13	18	366	8	10	518	821	515
25,	94	104	54	113	8	53	128	40	16	194	720	206
26	60	131	52	78	11	55	51	20	22	122	250	148
27,	164	131	450	62	9	22	31	17	19	95	145	658
28,	408	131	704	55	4	16	24	26	13	73	138	372
29,	224		506	37	6	12	17	34	21	63	184	145
30,	277		404	23	34	10	12	58	31	56	154	138
31,	200		110		47		19	2524		48		104

ESTIMATED MONTHLY DISCHARGE, TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY.

(Drainage area 102 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1883.					
October,	687	3	77	.75	.86
November,	220	15	53	.52	.58
December,	260	31	86	.84	.97
1884.					
January,	3492	331	703	6.88	7.93
February,	2412	392	990	9.69	10.45
March,	1871	306	580	5.68	6.55
April,	408	15	175	1.71	1.91
May,	349	9	57	.56	.65
June,	4379	4	314	3.07	3.54
July,	2309	5	242	2.37	2.73
August,	103	3	25	.24	.28
September,	29	2	7	.07	.08
October,	250	0	12	.12	.14
November,	859	10	108	1.06	1.18
December,	2372	44	353	3.45	3.98
The year,	4379	0	297	2.91	39.42
1885.					
January,	2614	82	401	3.92	4.52
February,	1885	58	340	3.33	3.47
March,	1027	51	265	2.59	2.99
April,	3664	29	415	4.06	4.53
May,	186	12	44	.43	.50
June,	15	1	7	.07	.08
July,	325	0	20	.20	.23
August,	1489	1	112	1.10	1.27
September,	8	1	3	.03	.03
October,	244	1	31	.30	.35
November,	1137	23	236	2.31	2.58
December,	809	30	158	1.55	1.79
The year,	3664	0	169	1.66	22.34
1886.					
January,	3352	83	388	3.80	4.38
February,	5404	87	910	8.90	9.27
March,	2598	35	382	3.74	4.31
April,	3692	24	438	4.29	4.78
May,	2121	17	304	2.97	3.42
June,	1030	18	129	1.26	1.41
July,	378	9	69	.68	.78
August,	22	2	9	.09	.10
September,	5	1	2	.02	.02
October,	17	1	4	.04	.05
November,	2064	7	180	1.76	1.96
December,	1016	23	212	2.07	2.39
The year,	5404	1	252	2.47	32.87
1887.					
January,	2544	100	449	4.39	5.06
February,	2357	107	517	5.06	5.27
March,	1538	48	342	3.35	3.86
April,	312	24	93	.91	1.01
May,	669	15	87	.85	.98
June,	1483	9	110	1.08	1.20
July,	1858	10	145	1.42	1.64
August,	1883	16	173	1.69	1.95
September,	349	10	38	.37	.41
October,	90	7	23	.23	.27
November,	79	9	24	.23	.26
December,	1201	20	283	2.77	3.20
The year,	2544	7	190	1.86	25.11

ESTIMATED MONTHLY DISCHARGE, TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY.

(Drainage area 102 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1888.					
January,	3492	86	571	5.59	6.44
February,	2768	104	637	6.23	6.72
March,	2659	79	556	5.44	6.28
April,	2019	32	393	3.85	4.28
May,	92	28	46	.45	.52
June,	43	3	15	.15	.17
July,	11	2	7	.07	.08
August,	3489	4	157	1.54	1.78
September,	5546	9	499	4.88	5.44
October,	993	32	138	1.35	1.56
November,	1130	49	286	2.80	3.12
December,	2689	63	310	3.03	3.49
The year,	5546	2	301	2.95	39.88
1889.					
January,	1530	72	389	3.81	4.39
February,	819	37	149	1.46	1.52
March,	2567	36	341	3.34	3.85
April,	2126	29	264	2.58	2.87
May,	911	16	151	1.48	1.71
June,	807	28	189	1.85	2.06
July,	4714	38	570	5.58	6.43
August,	2602	19	334	3.27	3.77
September,	3028	9	317	3.10	3.46
October,	2958	31	207	2.03	2.34
November,	3394	102	733	7.17	8.00
December,	606	55	172	1.68	1.94
The year,	4714	9	318	3.11	42.34
1890.					
January,	1586	45	181	1.77	2.041
February,	2512	75	371	3.64	3.790
March,	2942	64	602	5.89	6.791
April,	778	36	165	1.62	1.807
May,	1967	24	270	2.65	3.055
June,	485	16	68	0.67	0.748
July,	687	4	79	0.77	0.888
August,	478	9	81	0.79	0.911
September,	797	10	112	1.10	1.227
October,	2624	18	320	3.13	3.609
November,	249	21	63	0.62	0.692
December,	1044	28	135	1.32	1.522
The year,	2942	4	204	2.00	27.081
1891.					
January,	2451	57	545	5.33	6.145
February,	1726	97	540	5.28	5.498
March,	2858	79	446	4.36	5.027
April,	814	27	144	1.41	1.573
May,	61	12	25	0.24	.277
June,	35	6	17	0.17	.190
July,	611	3	81	0.79	.911
August,	3159	14	349	3.41	3.931
September,	598	7	85	0.83	.926
October,	212	5	39	0.38	.438
November,	386	7	58	0.57	.636
December,	1670	33	379	3.71	4.277
The year,	2858	3	226	2.21	29.829

ESTIMATED MONTHLY DISCHARGE, TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY.

(Drainage area 102 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1892.					
January,	3158	79	580	5.68	6.548
February,	237	35	116	1.15	1.240
March,	1645	65	433	4.24	4.888
April,	191	33	77	0.75	.837
May,	1333	39	188	1.84	2.121
June,	555	14	65	0.64	.714
July,	455	5	45	0.44	.507
August,	101	8	29	0.28	.323
September,	227	5	24	0.24	.268
October,	17	4	8	0.08	.092
November,	2962	6	292	2.86	3.191
December,	623	49	148	1.45	1.672
The year,	3158	4	167	1.64	22.401
1893.					
January,	1406	53	197	1.93	2.225
February,	2597	73	655	6.41	6.675
March,	2400	78	402	3.93	4.531
April,	1903	41	293	2.87	3.202
May,	2994	31	333	3.26	3.758
June,	217	9	40	0.39	0.435
July,	25	3	10	0.10	0.115
August,	1814	3	139	1.36	1.568
September,	834	13	76	0.74	0.826
October,	506	10	55	0.54	0.623
November,	1288	46	244	2.39	2.667
December,	1503	75	275	2.69	3.101
The year,	2994	3	227	2.22	29.726
1894.					
January,	137	41	71	0.69	0.795
February,	1606	65	373	3.65	3.801
March,	1174	61	275	2.70	3.113
April,	1283	47	209	2.05	2.287
May,	8650	16	760	7.44	8.578
June,	267	6	49	0.48	0.536
July,	68	3	17	0.17	0.196
August,	35	4	10	0.10	0.115
September,	3556	2	306	3.00	3.347
October,	1674	7	186	1.82	2.098
November,	1193	39	245	2.40	2.678
December,	3342	42	316	3.09	3.562
The year,	8650	2	235	2.30	31.106
1895.					
January,	2942	62	351	3.44	3.966
February,	902	35	167	1.64	1.708
March,	1519	114	476	4.66	5.372
April,	3857	41	426	4.17	4.652
May,	351	23	62	0.61	.703
June,	58	7	25	0.25	.279
July,	648	7	71	0.70	.807
August,	310	4	32	0.31	.357
September,	6	2	3	0.03	.033
October,	27	2	8	0.08	.092
November,	78	9	20	0.20	.223
December,	420	6	59	0.58	.669
The year,	3857	2	142	1.39	18.861

ESTIMATED MONTHLY DISCHARGE, TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY.

(Drainage area 102 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1896.					
January,	327	4	48	0.47	0.542
February,	6515	47	435	4.26	4.594
March,	3343	35	486	4.76	5.488
April,	297	20	67	0.66	0.736
May,	145	7	27	0.26	0.300
June,	35	4	16	0.16	0.179
July,	2417	5	225	2.21	2.548
August,	113	3	16	0.16	0.184
September,	1665	3	102	1.00	1.116
October,	1130	10	94	0.92	1.061
November,	1851	19	214	2.09	2.332
December,	289	27	71	0.69	0.795
The year.	6515	3	150	1.47	19.875
1897.					
January,	1221	23	160	1.57	1.810
February,	2312	49	287	2.81	2.926
March,	927	47	194	1.90	2.190
April,	1454	15	142	1.39	1.551
May,	3683	20	411	4.02	4.635
June,	2389	9	157	1.54	1.718
July,	1817	4	238	2.32	2.675
August,	745	8	65	0.63	.726
September,	42	4	11	0.11	.123
October,	21	3	7	0.07	.081
November,	1400	6	163	1.60	1.785
December,	3135	49	362	3.54	4.081
The year,	3683	3	183	1.79	24.301
1898.					
January,	2890	36	328	3.21	3.701
February.	4160	65	397	3.89	4.051
March,	1078	39	162	1.59	1.833
April,	810	53	195	1.91	2.131
May,	2940	69	447	4.37	5.038
June,	65	4	17	0.17	0.190
July,	20	2	7	0.07	0.081
August,	574	5	66	0.65	0.749
September,	15	4	8	0.08	0.089
October,	512	3	54	0.53	0.611
Novemper,	3451	27	412	4.03	4.496
December,	2932	23	375	3.67	4.231
The year,	4160	3	206	2.01	27.201
1899.					
January,	2032	79	419	4.11	4.738
February,	3222	65	546	5.35	5.571
March,	2819	203	797	7.81	9.004
April,	1328	39	144	1.41	1.573
May,	35	9	22	.22	0.254
June,	27	2	7	.07	.078
July,	19	3	7	.07	.081
August,	417	2	90	.88	1.015
September,	1522	9	271	2.66	2.968
October,	146	9	17	.17	.196
November,	921	30	94	.92	1.026
December,	913	23	113	1.11	1.280
The year,	3222	2	211	2.07	27.784

ESTIMATED MONTHLY DISCHARGE, TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY.

(Drainage area 102 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a 1900.					
January,			219	2.14	2.467
February,			500	4.89	5.092
March,			248	2.43	2.802
April,			116	1.14	1.272
May,			79	.77	.888
June,			31	.30	.335
July,			61	.60	.692
August,			17	.17	.196
September,			8	.08	.089
October,			13	.13	.150
November,			35	.34	.379
December,			62	.61	.703
The year,			116	1.13	15.065
1901.					
January,	1768	12	145	1.42	1.637
February,	11	4	9	.09	.094
March,	3353	9	461	4.52	5.211
April,	3388	31	404	3.96	4.418
May,	1219	7	202	1.98	2.283
June,	289	3	58	.57	.636
July,	7	3	5	.05	.058
August,	893	4	123	1.21	1.395
September,	608	7	40	.39	.435
October,	52	5	17	.17	.196
November,	201	4	27	.26	.290
December,	4039	19	622	6.10	7.033
The year,	4039	3	176	1.73	23.686
1902.					
January,	2969	39	220	2.16	2.49
February,	3406	10	620	6.08	6.33
March,	5958	48	629	6.17	7.11
April,	1772	16	203	1.99	2.22
May,	166	7	28	.27	.31
June,	110	3	13	.13	.15
July,	515	3	52	.51	.59
August,	37	3	14	.14	.16
September,	2291	2	222	2.18	2.43
October,	2616	23	377	3.70	4.27
November,	435	21	74	.73	.81
December,	4260	54	671	6.58	7.59
The year,	5958	2	260	2.55	34.46
1903.					
January,	1889	68	385	3.77	4.346
February,	3498	87	443	4.34	4.519
March,	2204	61	394	3.86	4.450
April,	2260	28	388	3.80	4.240
May,	36	4	15	.15	.173
June,	640	3	142	1.40	1.562
July,	1766	5	207	2.03	2.340
August,	897	5	80	.79	.911
September,	340	8	57	.56	.625
October,	4968	5	316	3.10	3.574
November,	243	16	38	.37	.413
December,	1857	23	236	2.31	2.663
The year,	4968	3	225	2.20	29.816

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a Computed by J. E. Codman, from rainfall and monthly flow of Neshaminy and Perkiomen creeks.

ESTIMATED MONTHLY DISCHARGE, TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY.

(Drainage area 102 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1904.					
January,	3133	116	412	4.03	4.646
February,	2090	23	214	2.09	2.254
March,	1736	55	354	3.46	3.989
April,	1494	21	183	1.79	1.997
May,	715	7	46.9	.459	.529
June,	1119	13	152	1.49	1.662
July,	265	11	49.6	.485	.559
August,	1415	18	229	2.24	2.582
September,	4395	4	258	2.52	2.812
October,	2004	14	155	1.52	1.752
November,	487	23	116	1.14	1.272
December,	556	17	80.5	.788	.909
The year,	4395	4	188	1.83	24.963
1905.					
January,	4174	58	293	2.87	3.31
February	79	58	61.1	.599	.624
March,	2657	32	709	6.95	8.01
April,	764	30	106	1.04	1.16
May,	26	5	16.3	.160	.184
June,	21	3	8.8	.086	.096
July,	36	2	6.3	.062	.071
August,	3353	4	231	2.26	2.61
September,	1129	18	177	1.74	1.941
October,	817	12	88	.863	.995
November,	2167	8	130	1.27	1.42
December,	1061	24	219	2.15	2.48
The year,	4174	2	170	1.67	22.92
1906.					
January,	1360	58	242	2.37	2.732
February,	1760	58	235	2.30	2.395
March,	2930	44	424	4.16	4.796
April,	3200	30	337	3.30	3.682
May,	944	4	67.1	.658	.759
June,	1000	7	83.9	.823	.918
July,	611	5	42.4	.416	.480
August	723	6	50.7	.497	.573
September,	15	3	5.8	.056	.063
October,	138	4	36.3	.356	.411
November,	824	14	106.	1.04	1.160
December,	1860	21	198	1.94	2.237
The year,	3200	3	152	1.49	20.206
1907.					
January,	2070	93	378	3.71	4.28
February,	404	27	137	1.34	1.40
March,	2980	26	743	7.28	8.39
April,	1420	35	129	1.26	1.41
May,	552	22	93.6	.918	1.06
June,	1040	14	99.3	.974	1.09
July,	164	6	35.8	.351	.40
August,	27	3	8.5	.083	.10
September,	4120	5	384	3.76	4.20
October,	2640	23	283	2.77	3.19
November,	1760	55	444	4.35	4.85
December,	2550	61	434	4.25	4.90
The year,	4120	3	264	2.59	35.27

ESTIMATED MONTHLY DISCHARGE, TOHICKON CREEK, AT POINT PLEASANT, BUCKS COUNTY.

(Drainage area 102 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1908.					
January,	1700	58	245	2.40	2.77
February,	2770	44	473	4.64	5.00
March,	2260	58	319	3.13	3.61
April,	171	31	66.3	.65	.72
May,	1380	36	300	2.94	3.39
June,	162	10	32.6	.32	.36
July,	160	4	17.6	.173	.20
August,	42	3	9.4	.092	.11
September,	21	2	5.8	.057	.06
October,	267	2	32.7	.321	.37
November,	26	5	14.7	.144	.16
December,	205	9	50.2	.492	.57
The year,	2770	2	130	1.28	17.32
1909.					
January,	2380	33	245	2.40	2.77
February,	3050	49	550	5.39	5.61
March,	810	34	229	2.25	2.59
April,	1250	24	277	2.72	3.04
May,	432	20	97.8	.959	1.11
June,	488	11	52.	.510	.57
July,	13	4	7.0	.069	.08
August,	8	2	4.0	.039	.04
September,	6	2	2.8	.028	.03
October,	7	2	3.7	.036	.04
November,	37	3	11.2	.110	.12
December,	2824	7	153.	1.50	1.73
The year,	3050	2	136.	1.33	17.73
1910.					
January,	3369	7	664	6.510	7.505
February,	2607	61	476	4.667	4.860
March,	3064	22	332	3.255	3.752
April,	3550	11	378	3.706	4.135
May,	216	21	61	.598	.690
June,	1124	14	117	1.147	1.280
July,	12	2	5	.049	.057
August,	458	2	30	.294	.339
September,	490	4	75	.735	.820
October,	17	2	7	.069	.080
November,	1518	8	123	1,206	1,346
December,	782	8	102	1.000	1.153
The year,	3550	2	197	1.936	26.617
1911.					
January,	2036	60	281	2.755	3.176
February,	691	62	139	1.363	1.419
March,	1848	52	279	2.735	3.153
April,	1624	23	227	2.225	2.482
May,	67	4	27	.265	.306
June,	484	10	69	.676	.755
July,	641	6	73	.716	.826
August,	2524	4	100	.980	1.130
September,	1823	10	110	1.078	1.203
October,	1592	32	326	3.196	3.685
November,	2480	31	338	3.314	3.697
December,	1218	59	268	2.627	3.029
The year,	2524	4	186	1.828	24.861

DELAWARE BASIN—STATION NO. 16.

DELAWARE RIVER AT LAMBERTVILLE, NEW JERSEY.

DESCRIPTION OF STATION.

This station was established July 22, 1897, by the United States Geological Survey, and was discontinued April 1st, 1908. The original gage was a standard chain gage attached to the covered toll bridge at Lambertville, N. J. The datum of this gage was 2.0 feet below that of the United States Weather Bureau gage painted on the first bridge pier, and was referred to a copper bolt set in the sill of the extreme south door on the east side of the station of the Pennsylvania Railroad; elevation 27.82 feet. This bench mark is No. 9, of the Pennsylvania Railroad and has an elevation of 72.69 feet above sea level. The bridge to which the original gage was attached was carried away in the flood of October 10-11, 1903, and from that date until July 22, 1904, gage heights were read from a temporary gage on one of the piers. On the latter date a standard chain gage was attached to the new steel bridge which occupies the site of the old wooden bridge and set to the same datum as the original chain gage; length of chain, 30.46 feet. At the time the new gage was installed a second bench mark was established on the top of the bolt in the fifth course below the coping on the upstream face of the left abutment; elevation 14.82 feet.

Discharge measurements were made from the lower side of the bridge to which the gage was attached. The initial point for soundings was on the left bank. The channel is straight above and below the station. The bed of the stream is of gravel and sand and does not change. A dam located about a mile below the station may change slowly and thus in time affect the stage of water at the station. The gage was read twice daily by Charles H. Naylor, collector of tolls.

The Delaware Division of the Pennsylvania Canal, running from Easton, Pa. to Bristol, Pa., utilizes part of the total flow of the river at Lambertville on the western side. Little or no water flows in this canal during the winter period, but during the rest of the year the discharge probably averages about 250 to 300 second-feet.

The Delaware and Raritan canal feeder takes out water at Bull's Island, about 7 miles above Lambertville, N. J. As indicated by 13 measurements made by engineers of the United States Geological Survey, it utilizes about 356 to 535 second-feet, or an average of 468 second-feet of the total flow of the river at Lambertville on the easterly side throughout the entire year. This canal follows the Delaware River to Trenton, N. J., and thence runs northeast, following Millstone and Raritan rivers to New Brunswick, N. J. In the winter months the canal discharge is usually affected by ice.

During the period this gage was in operation, 26 discharge measurements were made by the United States Geological Survey and the Water Supply Commission of Pennsylvania. The plotting of these measurements indicates that one curve applies from 1897 to the middle of 1902. A second curve, which is subject to question, crosses the first curve and varies from the former curve from 0 to 40 percent. This appears to apply to the middle of 1906. The discharge as measured December 5, 1906, is about 50 percent. of that shown by this second curve and the measurement of October 19, 1907, is about 65 percent. thereof. Taking these facts into consideration, it would appear that no discharge data could ever be based on the daily gage height record with any certainty unless 10 or 12 measurements could be made each year and therefore the discharge tables have not been published.

On account of the conditions existing at this station, it was superceded by a gaging station, established on July 3, 1906, at Riegelsville, N. J., about 30 miles above Lambertville, N. J. The complete data on the Riegelsville Station will be found on page 92 of this report.

The following discharge measurements and daily gage heights are taken from the published reports of the United States Geological Survey.

DISCHARGE MEASUREMENTS, DELAWARE RIVER, AT LAMBERTVILLE, N. J.

(Drainage area 6,855 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1897.							
1	July 22,	Davis,	------	------	------	5.50	21,831	
2	Sept. 14,	Paul,	------	------	------	3.42	5,308	
	1898.							
3	Feb. 24,	do	------	------	------	7.85	44,421	
4	Sept. 21,	do	------	------	------	3.30	4,683	
	1899.							
5	Mar. 31,	do	------	------	------	6.30	27,737	
6	June 2,	do	------	------	------	3.70	6,410	
7	Sept. 19,	do	------	------	------	2.75	2,430	
	1900.							
8	May 22,	do	------	------	------	5.10	17,750	
9	Sept. 27,	do	------	------	------	2.95	1,824	
	1901.							
10	Aug. 31,	do	------	------	------	5.07	17,217	
11	Oct. 30,	do	------	------	------	3.65	6,667	
	1902.							
12	April 15,	do	------	------	------	6.30	30,036	Add 513 sec.-ft. for canal flow.
13	Sept. 23,	do	------	------	------	2.90	3,468	Add 517 sec.-ft. for canal flow.
	1903.							
14	June 27,	Hoyt,	------	------	------	6.00	22,354	Including canal.
15	Aug. 3,	do	------	------	------	4.18	7,305	do
	1904.							
16	July 22,	Taylor,	910	3614	0.90	2.98	3,249	do
17	Nov. 7,	Murphy,	1030	4747	1.33	3.94	6,305	do
	1905.							
18	June 17,	Bolster,	811	3615	0.94	2.90	3,386	Add 458 sec.-ft. for canal flow.
	1906.							
19	May 1,	Follansbee,	982	5760	2.01	5.16	11,600	Not including canal.
20	July 4,	Follansbee,	------	5800	2.07	5.36	12,000	Not including canal.
21	Dec. 5,	Grover,	945	4990	0.99	4.75	4,910	Add 443 sec.-ft. for canal flow. Discharge affected by ice conditions.
	1907.							
22	Oct. 19,	Grant,	970	5480	1.18	4.73	6,480	Not including canal. Usual flow in canal.
	1908.							
23	Feb. 16,	Bolster & Reckord,	------	14100	7.94	13.60	112,000	Not including canal. Usual flow in canal. Float measurement using ice.
24	Feb. 16,	do	973	14300	7.98	13.80	114,000	do
25	May 14,	Barrows,	944	6420	2.94	6.24	18,900	
26	Sept. 1,	Stevens,	833	3540	0.47	2.82	1,650	

MEAN DAILY GAGE HEIGHT, IN FEET, OF DELAWARE RIVER, AT LAMBERTVILLE, N. J.

1897. DAY.	JULY.	AUG.	SEPT.	OCT.	NOV	DEC.
1,	----------	6.70	3.74	2.75	2.35	5.35
2,	----------	6.13	3.83	2.60	3.90	5.00
3,	----------	5.58	4.00	2.65	5.40	4.75
4,	----------	5.17	3.95	2.50	5.15	4.55
5,	----------	5.74	4.08	2.40	4.90	5.35
6,	----------	5.87	3.91	2.30	4.40	6.00
7,	----------	5.37	3.87	2.20	4.15	7.00
8,	----------	5.04	3.70	2.20	3.95	6.10
9,	----------	4.78	3.38	2.20	3.90	5.60
10,	----------	4.52	3.00	2.20	4.15	5.40
11,	----------	4.70	3.00	2.20	4.45	5.20
12,	----------	4.83	3.87	2.30	4.60	5.20
13,	----------	4.91	3.63	2.65	4.65	5.45
14,	----------	4.95	3.41	3.20	4.70	6.35
15,	----------	4.70	a3.17	3.35	4.50	8.25
16,	----------	4.81	2.90	3.45	4.35	10.15
17,	----------	4.45	2.95	3.35	4.40	9.00
18,	----------	4.25	2.75	3.05	4.50	7.60
19,	----------	4.16	2.85	2.75	4.45	6.85
20,	----------	4.04	2.50	2.50	4.35	6.20
21,	----------	3.91	2.55	2.45	4.25	5.60
22,	----------	3.87	2.60	2.40	4.20	5.40
23,	5.50	4.00	2.65	2.45	4.10	5.25
24,	5.25	4.17	2.75	2.60	4.10	5.25
25,	5.00	4.33	3.05	2.60	4.05	4.90
26,	4.92	5.20	3.25	2.55	3.95	4.50
27,	4.83	5.08	3.10	2.70	4.75	4.60
28,	6.12	4.69	3.40	2.55	6.20	4.50
29,	7.46	4.25	3.10	2.35	6.35	†
30,	8.75	3.95	2.85	2.30	5.65	4.20
31,	7.75	3.74	----------	2.25	----------	4.25

a New gage erected. Former reading changed to refer to new datum.
†Frozen.

MEAN DAILY GAGE HEIGHT, IN FEET, OF DELAWARE RIVER, AT LAMBERTVILLE, N. J.

1898. DAY.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1,	4.30	a	5.45	6.30	5.70	5.70	3.60	3.95	5.15	3.35	5.05	5.40
2,	4.05	a	5.20	5.85	5.45	5.30	3.50	4.20	4.70	3.25	4.90	5.20
3,	3.90	a	5.05	5.55	5.20	5.05	3.40	5.40	4.50	2.95	4.70	5.05
4,	a	a	5.10	5.35	5.20	4.90	3.30	4.70	4.35	2.90	4.60	5.00
5,	a	a	4.80	5.10	5.25	4.75	3.20	5.35	4.25	2.90	4.45	6.85
6,	a	a	4.70	4.95	5.35	4.60	3.20	6.40	4.25	2.90	4.40	6.30
7	a	a	4.65	4.85	5.60	4.40	3.05	6.20	4.25	2.90	4.35	6.10
8,	a	4.40	4.50	4.75	7.10	4.40	3.00	5.25	4.25	3.95	4.30	5.75
9	4.30	4.50	4.60	4.70	7.95	4.30	3.00	4.30	4.55	4.05	4.30	5.45
10,	4.25	4.45	4.80	4.60	6.80	4.20	2.90	4.85	4.60	3.90	4.80	5.45
11,	4.25	4.55	5.25	4.50	6.10	4.10	2.90	6.20	4.35	4.35	5.55	5.00
12,	4.20	4.80	5.90	4.40	5.80	4.15	2.65	5.35	4.15	4.10	7.60	5.15
13,	4.25	5.25	7.30	4.40	5.95	4.00	2.70	4.90	4.05	3.85	7.15	4.80
14,	4.55	6.85	8.30	4.30	5.65	4.00	2.60	4.55	3.95	3.90	6.30	4.95
15,	5.45	6.20	8.00	4.45	6.25	4.55	2.50	4.45	3.80	4.10	5.75	a
16,	5.85	5.55	6.80	4.60	6.00	4.30	2.50	4.30	3.75	4.60	5.45	a
17,	5.50	5.30	6.10	4.45	6.60	4.15	2.40	4.10	3.70	5.50	5.30	a
18,	5.20	4.85	5.85	4.30	6.50	4.00	2.50	4.35	3.65	5.00	5.15	a
19,	4.75	4.60	5.55	4.25	6.05	3.90	2.60	4.50	3.55	4.70	6.85	4.50
20,	4.80	7.95	5.50	4.20	6.05	3.90	4.20	4.45	3.45	4.60	6.85	4.85
21,	5.85	8.85	6.60	4.20	6.60	3.90	3.70	4.75	3.30	4.50	7.15	4.80
22,	6.50	9.60	6.60	4.05	6.55	4.10	3.70	5.00	3.30	4.60	6.65	4.70
23,	8.00	8.85	6.60	4.10	6.00	4.05	3.30	4.55	3.40	4.65	6.50	5.85
24,	8.40	7.85	8.30	4.35	7.00	3.95	3.10	4.35	3.50	4.80	6.30	5.95
25,	7.70	7.00	7.95	5.80	6.15	3.70	3.00	6.95	3.45	4.70	6.10	6.30
26,	7.05	6.55	6.95	7.35	6.95	3.70	3.20	7.25	3.30	4.70	5.90	5.95
27,	6.40	6.05	6.40	7.30	7.65	3.60	3.40	6.45	3.25	5.20	5.90	5.50
28,	5.85	5.75	6.10	6.80	7.35	3.55	3.40	5.50	3.20	5.90	5.85	5.25
29,	5.60		6.10	6.50	7.00	3.50	4.20	5.10	3.20	5.95	5.35	4.70
30,	5.05		6.45	6.10	6.60	3.65	4.20	4.80	3.30	5.45	5.40	4.95
31,	4.90		6.75		6.10		4.05	4.60		5.25		4.90

a Frozen.

MEAN DAILY GAGE HEIGHT, IN FEET, OF DELAWARE RIVER, AT LAMBERTVILLE, N. J.

1899. DAY.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1,	4.95	a	6.80	6.25	4.75	3.60	4.40	4.20	3.45	4.65	3.40	3.80
2,	a	a	6.80	6.25	4.60	3.60	4.30	4.00	3.35	4.45	3.80	3.80
3,	a	a	6.30	5.95	4.60	3.30	3.95	4.00	3.35	4.25	4.05	3.90
4,	a	a	6.25	5.80	4.50	3.20	3.75	3.90	3.30	4.10	4.65	3.80
5,	5.40	4.50	7.95	5.65	4.40	3.05	3.65	3.85	3.45	4.05	4.75	3.95
6,	6.05	4.45	8.30	5.70	4.30	2.90	3.65	3.70	4.90	3.95	4.60	3.85
7,	7.00	4.40	9.65	5.90	4.20	2.95	3.65	3.90	4.35	3.90	4.55	3.90
8,	6.55	4.40	8.20	7.40	4.10	2.85	3.60	3.65	3.95	3.85	4.35	3.75
9,	6.10	a	7.20	9.10	4.00	2.90	3.90	3.55	3.85	3.75	3.75	3.75
10,	5.80	a	6.45	8.70	3.90	2.90	3.80	3.45	3.75	3.70	4.10	3.85
11,	5.35	a	6.20	7.65	3.85	2.85	3.75	3.65	3.50	3.60	4.10	3.70
12,	5.00	a	6.30	7.15	4.00	2.70	3.70	3.55	3.90	3.60	4.10	3.75
13,	4.80	a	7.50	7.75	4.00	2.60	3.75	3.35	3.65	3.60	4.25	4.20
14,	4.90	a	9.15	8.45	4.00	2.65	3.55	3.15	3.45	3.50	4.50	5.30
15,	5.05	a	8.10	8.85	3.90	2.60	3.55	3.10	3.35	3.50	4.45	5.60
16,	5.40	a	7.70	9.00	3.80	2.60	3.45	2.95	3.15	3.40	4.35	5.30
17,	5.95	a	6.90	8.90	3.80	2.50	3.60	2.80	3.10	3.40	4.35	5.10
18,	6.10	a	6.45	7.85	3.70	2.60	3.60	2.75	2.85	3.45	4.50	4.85
19,	5.50	a	7.40	7.25	3.80	2.45	3.70	2.50	2.75	3.40	4.50	4.70
20,	5.30	7.60	8.70	7.05	3.90	2.40	3.75	2.80	3.90	3.40	4.45	4.65
21,	5.30	6.65	9.00	7.15	3.90	2.40	3.55	2.65	3.90	3.40	4.30	4.75
22,	4.95	5.70	8.05	7.00	3.80	2.45	3.50	2.75	3.90	3.45	4.20	4.75
23,	5.05	6.05	7.70	6.70	3.70	2.75	3.35	2.90	3.75	3.35	4.20	4.65
24,	4.95	5.95	7.35	6.15	3.60	3.00	3.25	2.85	3.70	3.30	4.20	5.10
25,	7.30	5.65	7.25	5.95	3.60	3.25	3.10	2.60	3.65	3.25	4.10	5.45
26,	6.00	5.45	7.00	5.70	3.50	3.70	3.15	2.75	5.40	3.20	4.00	5.45
27,	5.60	8.25	6.65	5.50	3.40	4.30	3.40	3.95	6.05	3.20	4.00	5.20
28,	5.25	7.20	6.60	5.40	3.40	4.05	4.15	4.20	6.25	3.20	3.95	5.00
29,	4.95		7.40	5.10	3.20	4.00	4.00	3.75	5.40	3.45	3.90	a
30,	4.95		6.80	4.90	3.20	4.00	3.85	3.55	5.00	3.25	3.90	a
31,	4.75		6.40		3.40		4.30	3.65		3.20		a

a Frozen.

MEAN DAILY GAGE HEIGHT, IN FEET, OF DELAWARE RIVER, AT LAMBERTVILLE, N. J

1900. DAY.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1,	a	a	5.40	4.25	4.45	3.30	2.65	3.40	2.95	2.90	2.80	4.15
2,	a	a	12.00	4.20	4.35	3.40	2.50	3.15	3.05	2.50	2.75	4.05
3,	a	a	10.70	4.30	4.25	3.45	2.60	3.00	2.75	2.55	2.85	3.95
4,	a	7.00	7.95	4.40	4.20	3.65	2.90	3.05	2.90	2.65	3.20	3.95
5,	a	6.85	6.80	4.50	4.05	3.80	3.10	3.05	2.70	2.80	3.25	4.40
6,	a	5.75	6.20	4.40	4.00	3.70	3.40	2.70	2.70	2.55	3.20	4.90
7,	a	5.30	6.05	4.30	3.95	3.55	3.80	3.25	2.60	2.75	3.20	5.40
8	a	5.45	5.80	4.40	3.90	3.35	3.65	2.70	2.65	2.70	3.15	4.95
9	a	5.60	6.00	4.60	3.80	3.30	3.65	2.60	2.90	2.75	3.20	4.60
10,	a	6.95	5.60	4.55	3.80	3.55	3.55	2.65	2.85	2.75	3.10	4.45
11,	a	6.55	5.45	4.45	3.90	3.85	3.50	2.80	3.00	2.75	2.90	4.20
12,	5.65	5.60	5.20	4.30	3.80	3.80	3.35	2.65	3.25	2.60	2.75	3.95
13,	4.35	7.46	4.90	4.35	3.80	3.50	3.35	2.55	3.10	2.50	2.55	3.90
14,	3.95	11.40	4.60	4.40	3.80	3.45	3.20	3.05	3.00	3.15	2.70	4.40
15,	3.70	9.70	4.55	4.50	3.70	3.95	3.30	3.05	2.85	2.95	2.60	a
16,	3.60	8.10	4.50	4.45	3.60	3.95	3.10	2.80	3.45	3.00	2.85	a
17,	3.85	6.65	4.20	4.30	3.60	3.85	3.35	2.85	3.25	2.80	2.85	a
18,	3.80	5.95	4.20	4.75	4.00	3.70	3.25	2.80	3.00	2.60	3.10	a
19,	3.70	5.25	4.10	6.60	4.80	3.45	3.30	2.95	3.00	2.40	2.85	a
20,	4.45	5.05	5.15	7.15	5.35	3.45	3.35	3.15	2.70	2.35	2.80	a
21,	7.70	4.90	5.90	6.50	5.40	3.25	3.30	3.10	2.55	2.60	2.75	a
22,	7.75	6.05	6.30	6.00	5.05	3.20	3.50	2.95	2.65	2.65	2.85	a
23,	6.20	9.65	5.65	5.85	4.60	3.05	3.35	2.90	2.85	2.25	3.10	a
24,	5.75	8.70	5.30	5.95	4.25	3.15	3.45	2.80	2.85	2.40	3.40	3.40
25,	5.25	7.10	5.15	5.95	4.15	3.20	3.35	2.65	2.80	2.40	3.15	3.60
26	5.00	6.10	5.00	5.70	4.05	3.15	4.35	3.10	2.90	2.50	3.75	3.50
27,	5.20	5.25	4.85	5.25	3.95	3.00	4.10	3.05	2.95	2.50	3.50	3.80
28,	a	4.90	4.95	4.95	3.75	2.90	3.85	2.95	2.90	2.85	4.10	4.05
29,	a	----------	4.60	4.80	3.60	2.70	3.65	2.80	2.65	2.80	4.75	4.05
30,	a	----------	4.50	4.65	3.60	2.70	3.50	2.85	2.95	2.85	4.40	a
31,	a	----------	4.35	----------	3.45	----------	3.50	3.10	----------	2.95	----------	4.00

a Frozen.

MEAN DAILY GAGE HEIGHT, IN FEET, OF DELAWARE RIVER, AT LAMBERTVILLE, N. J.

1901. DAY.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1,	3.90	a	a	5.70	5.55	8.20	3.30	3.60	5.10	4.60	3.60	3.70
2,	3.80	a	a	5.40	5.25	7.25	3.20	3.70	5.05	4.60	3.60	3.65
3,	4.05	a	a	5.65	5.50	7.00	3.05	3.35	5.50	4.50	3.60	3.85
4,	a	a	2.90	6.05	6.00	6.70	3.10	3.15	5.45	4.30	3.50	4.30
5,	a	a	3.05	6.35	5.80	6.20	3.00	2.85	5.20	4.05	3.40	4.10
6,	a	a	3.15	6.70	5.40	5.70	3.00	2.70	4.80	3.95	3.45	a
7,	a	a	3.10	7.10	5.10	5.50	3.50	3.95	4.55	3.85	3.35	a
8,	a	a	2.80	7.85	4.95	5.95	4.15	4.20	4.35	3.70	3.25	a
9.	2.95	a	3.20	7.90	4.75	6.55	3.90	4.00	4.15	3.70	3.25	a
10,	3.30	a	3.40	7.20	4.80	6.00	3.70	3.90	4.05	3.60	3.35	4.05
11,	3.55	a	8.05	6.60	5.45	5.50	3.45	3.85	4.00	3.60	3.30	5.40
12,	4.95	a	6.25	6.20	6.55	5.15	3.60	4.00	4.00	3.50	3.25	6.80
13,	4.25	a	5.40	5.80	7.50	4.90	3.90	3.80	4.00	3.50	3.30	6.05
14	3.95	a	5.10	5.55	7.15	4.70	3.75	3.50	4.00	3.85	3.75	5.60
15,	3.80	a	5.30	5.35	6.55	4.50	3.55	3.40	4.00	4.30	4.20	14.60
16,	3.85	a	5.05	5.25	6.00	4.40	3.45	3.35	4.30	5.15	4.10	18.90
17,	3.80	a	4.85	5.15	5.60	4.35	3.35	3.15	4.35	5.15	4.00	12.60
18,	3.65	a	4.70	5.00	5.35	4.20	3.40	4.50	4.25	4.85	3.85	8.65
19,	a	a	4.70	4.90	5.15	4.10	3.45	7.25	4.25	4.60	3.80	7.30
20,	a	a	4.75	4.85	5.65	4.00	3.35	5.90	4.30	4.45	3.65	6.35
21	a	a	6.50	5.65	5.35	3.85	3.20	5.20	4.20	4.35	3.65	5.80
22,	a	a	10.50	8.15	5.15	3.80	2.95	5.60	4.05	4.15	3.50	5.15
23,	a	a	9.30	9.75	4.95	3.80	2.90	6.25	3.85	4.10	3.50	5.00
24,	3.30	a	7.45	8.80	4.85	3.75	2.70	6.20	3.75	4.00	3.75	4.75
25,	3.30	a	6.85	8.95	4.85	3.80	2.55	9.85	3.70	3.85	4.00	4.85
26	3.35	a	6.85	8.30	5.50	3.65	2.50	8.55	3.55	----------	4.00	4.80
27,	3.35	a	8.10	7.75	5.95	3.50	2.50	6.75	3.50	3.85	4.30	5.45
28,	3.20	a	9.40	6.90	5.75	3.50	2.55	6.00	3.45	3.75	4.10	5.05
29,	3.25	----------	8.10	6.30	6.05	3.75	2.45	5.45	3.55	3.70	a	7.55
30,	2.80	----------	6.70	5.90	8.30	3.45	3.80	5.00	4.40	3.60	a	9.20
31,	2.70	----------	6.15	----------	9.60	----------	3.60	4.75	----------	3.60	----------	8.85

a River frozen at gage.

MEAN DAILY GAGE HEIGHT, IN FEET, OF DELAWARE RIVER, AT LAMBERTVILLE, N. J.

1902. DAY.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1,	7.40	a	18.17	7.05	5.80	3.70	6.10	5.45	3.30	10.55	6.15	4.10
2,	6.45	4.75	20.21	6.60	5.85	3.55	6.05	5.20	3.20	9.60	5.75	4.00
3,	5.80	4.90	16.40	6.25	5.40	3.45	5.50	5.95	3.10	8.60	5.40	4.60
4,	5.40	a	12.50	5.95	5.20	3.40	5.15	5.70	2.95	7.40	5.10	4.65
5,	5.00		9.45	5.65	5.15	3.30	5.75	5.15	2.90	6.90	5.00	4.55
6,	4.95		8.15	5.45	5.00	3.30	5.20	4.85	2.85	7.10	4.85	4.50
7,	4.90		6.80	5.60	4.70	3.55	5.00	4.70	2.70	6.65	4.75	4.40
8,	4.85		6.45	6.05	4.65	3.55	5.10	4.50	2.80	6.25	4.65	4.20
9	4.70		7.00	7.20	4.50	3.40	5.10	4.35	2.90	5.80	4.55	4.15
10,	4.70		7.70	8.05	4.30	3.35	4.70	4.20	3.45	5.45	4.40	4.10
11,	4.50		7.95	8.30	4.20	3.30	4.50	4.15	3.65	5.20	4.30	4.10
12,	4.45		7.60	7.55	4.10	3.40	4.25	4.20	4.10	6.70	4.20	4.10
13,	4.15		8.85	7.10	4.10	3.45	4.15	4.10	3.95	7.15	4.10	4.20
14,	a		11.05	6.75	4.00	3.65	4.00	3.90	3.70	6.90	4.10	4.10
15,			10.20	6.25	3.90	3.65	3.80	3.80	3.55	6.30	4.00	4.10
16,			8.70	5.95	3.90	3.55	3.65	3.70	3.45	5.90	3.95	5.60
17,			9.35	5.60	3.80	3.55	3.60	3.60	3.25	5.55	4.00	8.75
18,			11.80	5.45	3.75	3.75	3.50	3.50	3.20	5.25	3.85	9.60
19,			9.70	5.15	3.75	3.85	3.50	3.30	3.00	5.10	3.80	8.25
20,	3.90		7.90	5.10	3.65	3.80	3.65	3.45	2.95	4.95	3.80	7.30
21.	3.80		7.20	4.90	3.70	3.75	3.95	3.30	2.95	4.75	3.70	7.60
22,	8.93		6.75	4.80	3.65	4.85	6.10	3.50	3.10	4.60	3.70	11.80
23,	8.55		6.35	4.65	3.60	4.30	6.35	3.35	3.00	4.50	3.70	12.90
24,	7.95		6.20	4.55	3.55	4.15	5.75	3.40	2.85	4.40	3.70	10.70
25,	6.60		6.10	4.45	3.50	3.85	5.55	3.30	2.90	4.30	3.70	8.60
26.	5.80	8.90	5.90	4.30	3.50	3.85	5.90	3.20	5.65	4.25	3.85	7.60
27,	5.70	8.66	5.70	4.30	3.95	4.00	5.45	3.00	9.70	4.20	4.10	7.10
28.	5.75	12.34	5.45	4.30	4.05	3.95	4.90	2.95	9.05	4.90	4.10	6.35
29,	5.45		5.80	4.20	4.10	4.00	4.80	3.15	8.35	7.20	4.20	5.85
30,	a		7.60	5.15	3.90	4.70	5.20	3.10	12.10	8.20	4.15	5.70
31,			7.90		3.85		5.60	3.30		6.95		5.45

a Frozen Jan. 14 to 19; Jan. 30 to Feb. 1; Feb. 4 to 25.

MEAN DAILY GAGE HEIGHT, IN FEET, OF DELAWARE RIVER, AT LAMBERTVILLE, N. J.

1903. DAY.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1,	5.45	7.65	a 13.58	6.60	4.20	3.00	5.70	4.60	6.90	3.50	4.65	4.40
2,	5.25	6.45	12.90	6.40	4.05	2.95	5.55	4.25	6.15	3.50	4.65	4.35
3,	6.65	6.25	9.15	5.95	3.95	2.85	5.40	4.05	5.60	3.50	4.55	4.55
4,	6.75	7.44	7.85	5.85	3.90	2.85	4.85	4.00	5.25	3.25	4.50	4.30
5,	6.65	8.40	7.20	5.95	4.00	2.70	4.75	4.85	4.95	3.40	4.50	4.45
6,	6.35	7.65	6.80	5.70	3.95	2.70	4.50	5.80	4.75	3.30	4.50	4.40
7,	5.95	7.20	6.60	5.50	3.85	2.85	4.35	6.50	4.50	3.30	4.45	4.25
8,	5.50	6.60	6.70	6.40	3.75	3.25	4.15	6.60	4.35	3.70	4.60	4.30
9	5.20	6.30	7.30	7.45	3.65	3.80	4.10	5.85	4.25	9.40	4.50	4.40
10,	4.85	5.80	9.10	8.00	3.60	3.60	3.95	5.45	4.20	20.20	4.40	4.45
11,	b	5.50	8.60	7.35	3.60	3.65	3.85	5.10	4.15	c20.70	4.30	4.30
12,	b	6.40	9.90	6.90	3.55	5.70	4.00	4.90	4.10	12.70	4.30	4.25
13,	b	7.30	9.10	6.60	3.45	9.55	3.90	4.75	4.10	9.85	4.20	4.80
14,	b	7.50	7.70	7.13	3.40	9.35	3.80	4.60	4.05	7.30	4.25	5.25
15,	b	6.85	7.25	7.80	3.40	7.60	3.75	4.30	3.95	5.55	4.20	b
16,	b	6.50	6.80	7.45	3.35	7.10	3.65	4.25	4.25	4.85	4.20	b
17,	b	6.30	6.45	7.05	3.30	6.35	3.60	4.20	3.95	4.45	4.20	b
18,	4.30	5.65	6.15	6.45	3.35	5.90	3.85	4.10	4.50	4.40	5.60	b
19,	4.70	b	5.85	5.90	3.30	5.50	4.80	4.05	4.65	4.40	7.35	b
20,	4.40	b	5.65	5.65	3.30	5.45	4.85	4.05	4.50	4.45	6.50	3.70
21,	5.40	b	5.50	5.40	3.30	5.80	5.55	4.20	4.35	4.05	5.80	5.55
22,	5.85	a	6.15	5.25	3.30	6.65	5.05	4.10	4.10	3.85	5.45	6.25
23,	5.35	4.80	7.90	5.05	3.30	6.80	5.05	4.10	4.00	5.70	5.25	4.95
24,	5.50	4.90	d12.73	4.85	3.30	6.60	5.15	4.00	3.85	5.65	5.05	4.15
25,	5.10	4.90	d12.40	4.80	3.25	6.70	5.05	3.85	3.65	5.50	5.00	3.85
26,	4.70	4.70	9.55	4.70	3.10	6.30	4.60	3.75	3.60	5.35	4.85	3.70
27	4.65	4.70	8.10	4.55	3.20	5.95	4.30	3.75	3.55	5.15	4.55	3.45
28.	4.65	8.12	7.25	4.45	3.00	5.55	4.10	4.25	3.55	5.10	4.40	3.00
29.	5.65		6.65	4.35	3.10	5.45	3.90	4.95	3.50	5.00	4.70	b
30,	5.75		6.15	4.20	3.10	5.60	3.90	7.56	3.50	4.90	4.50	b
31,	8.15		6.45		3.10		4.60	7.75		4.80		b

a Highest record 15.10 at 8:40 p. m. b Frozen at gage. c Highest record 24.50 at 3:00 a. m. d Highest record 13.80 at 10:20 p. m.

MEAN DAILY GAGE HEIGHT, IN FEET, OF DELAWARE RIVER, AT LAMBERTVILLE, N. J.

1904. DAY.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1,	------	------	------	5.45	3.85	3.20	3.10	3.80	3.10	3.65	4.35	4.00
2,	------	------	------	8.05	3.75	3.20	3.50	3.55	3.05	3.60	4.20	4.10
3,	------	a	b	7.80	3.45	3.20	3.35	3.40	3.05	3.90	4.10	4.05
4,	------	------	------	6.50	3.10	3.05	3.25	3.30	3.10	3.75	4.05	3.95
5,	a	c7.30	------	5.30	2.95	2.90	3.10	3.55	3.05	3.55	3.95	3.90
6,	------	c6.30	------	4.95	2.85	2.95	3.05	3.60	3.00	3.50	4.00	3.75
7,	------	------	5.30	4.75	2.65	3.05	3.00	3.40	3.10	3.40	3.90	3.80
8,	------	a	9.45	4.85	2.60	2.80	3.45	3.30	3.20	3.40	3.80	3.65
9,	------	------	7.70	5.30	2.50	2.70	4.20	3.35	3.00	3.40	3.80	3.55
10,	a	7.00	8.05	5.60	2.50	3.10	4.00	3.30	2.95	3.30	3.70	3.60
11,	------	8.30	6.40	5.65	2.55	3.25	3.70	4.10	3.20	3.20	3.70	a
12,	------	------	5.20	5.10	2.65	3.15	3.55	3.45	2.95	3.90	3.70	------
13,	------	a	4.55	4.60	2.60	2.85	3.70	3.95	2.80	3.70	3.80	------
14,	------	------	4.15	4.15	2.60	2.70	3.50	4.15	3.50	3.90	4.40	------
15,	a	7.90	3.80	3.85	2.65	2.65	3.00	3.80	6.95	4.20	4.35	------
16,	------	------	3.75	3.50	2.80	2.50	3.00	3.45	5.15	4.30	4.25	------
17,	------	------	3.45	3.35	2.80	2.40	3.00	3.25	4.75	4.05	4.20	------
18,	------	a	3.40	3.05	3.05	2.30	3.05	3.15	4.60	3.90	4.10	------
19,	------	------	3.40	3.00	3.25	2.20	3.40	3.05	4.20	3.75	4.05	------
20,	a	------	3.85	2.90	3.35	2.20	3.40	3.40	3.90	3.60	4.00	------
21	------	d10.00	3.85	2.90	3.35	2.20	3.00	3.95	3.60	4.85	3.90	------
22,	------	d15.05	3.95	2.85	3.35	2.10	3.20	3.95	3.50	7.60	4.05	------
23,	e5.00	d13.50	4.25	2.70	3.20	2.00	2.80	4.30	3.35	9.15	4.40	------
24,	e4.45	d11.75	4.20	2.60	2.95	2.00	2.80	4.05	3.20	7.10	4.70	------
25,	e4.30	------	5.75	2.50	2.85	2.00	2.75	4.20	3.20	6.25	4.60	------
26,	e5.00	------	f6.45	2.50	2.80	2.00	2.80	4.00	3.10	5.60	4.55	------
27,	------	------	f9.75	2.80	3.20	2.80	2.95	3.65	3.10	5.20	4.45	------
28,	------	b	8.30	3.15	3.50	2.80	3.45	3.55	3.75	5.00	4.30	------
29,	a	------	6.20	3.60	3.35	2.80	3.40	3.40	3.70	4.80	4.20	e7.90
30,	------	------	5.15	3.95	2.95	2.90	3.45	3.30	3.75	4.70	4.00	9.40
31,	------	------	4.80	------	3.15	------	4.10	3.20	------	4.50	------	5.70

a River frozen at pier; from Jan. 1-23, frozen across. b Ice jam at pier Feb. 25-Mar. 7. c Ice jam ¾ mile below bridge is cause of rise. d Ice jam cause of rise. e River open. f Upper Delaware ice cause of rise.

MEAN DAILY GAGE HEIGHT, IN FEET, OF DELAWARE RIVER, AT LAMBERTVILLE, N. J.

1905. DAY.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1,	5.15	a		8.70	3.75	2.70	2.30	3.15	3.25	4.10	4.25	6.90
2,	5.10			7.80	3.70	2.70	2.35	3.55	3.60	4.05	4.20	6.10
3,	5.00			6.95	3.65	2.60	2.35	3.65	4.60	3.95	4.20	5.85
4,	b			6.25	3.55	2.50	2.60	3.75	5.40	3.90	4.15	8.88
5,				6.20	3.50	2.50	3.10	3.65	7.60	3.85	4.10	9.30
6,			c	6.40	3.40	2.45	3.35	3.65	6.70	3.80	4.10	7.55
7,	8.25			6.55	3.35	2.50	3.00	3.30	5.85	3.75	4.05	6.70
8,	10.82			6.55	3.40	2.50	2.85	3.35	5.30	3.75	4.20	6.15
9	9.75			6.05	3.45	3.10	2.80	3.15	5.00	3.60	4.30	5.85
10,	8.05		d4.90	5.80	3.40	3.30	2.55	3.10	4.75	3.55	4.35	5.55
11,	7.05		4.90	5.55	3.30	3.20	2.60	2.95	4.65	3.45	4.30	5.45
12,	6.55		5.00	5.55	3.20	3.05	2.60	3.35	5.95	4.60	4.25	5.20
13,	6.40		4.55	5.45	3.15	2.85	3.05	3.70	7.37	5.45	4.20	5.10
14,	6.10		4.70	5.40	3.20	2.90	3.10	3.60	6.70	5.50	4.10	4.95
15,	6.00		4.55	5.25	3.40	3.15	3.35	4.10	5.95	5.15	4.10	4.75
16,	5.20		4.65	4.95	3.40	3.10	3.40	5.50	5.45	4.80	4.05	4.55
17,	4.85		4.80	4.75	3.25	2.95	3.10	4.85	5.15	4.55	3.95	4.60
18,	4.90		5.25	4.75	3.40	2.80	3.10	4.50	5.05	4.45	3.90	4.60
19,	4.70		6.52	4.60	3.25	2.60	3.05	4.40	5.10	4.35	4.00	4.30
20,	4.75		10.12	4.50	3.20	2.55	2.85	4.25	5.05	5.03	3.95	4.30
21,	4.75		11.69	4.45	3.15	2.50	3.00	3.95	5.30	5.40	3.80	5.10
22,	4.65		10.95	4.50	3.10	2.70	2.80	3.80	5.35	5.50	3.80	5.70
23,	4.25		10.00	4.55	3.05	2.85	3.10	3.55	5.50	5.25	3.65	5.75
24,	4.15		9.15	4.65	2.90	3.10	3.20	3.40	5.10	5.05	3.65	5.70
25,	3.70		9.40	4.50	2.90	3.20	3.20	3.50	4.85	4.90	3.65	5.40
26,	b		11.22	4.05	2.80	3.20	3.00	4.45	4.65	4.80	3.65	5.05
27,			11.58	4.05	2.70	2.85	2.80	4.25	4.50	4.70	3.70	5.00
28			11.87	4.00	2.80	2.60	2.15	3.90	4.35	4.60	3.65	4.80
29,			10.70	3.95	2.70	2.45	2.85	3.65	4.25	4.50	4.85	4.80
30,			9.80	3.80	2.65	2.40	3.45	3.45	4.15	4.45	5.50	5.15
31,			9.35		2.70		3.25	3.30		4.35		5.15

a River frozen entirely across. b River frozen at gage. c Channel open between 1st and 2nd piers. d Ice almost gone.

MEAN DAILY GAGE HEIGHT, IN FEET, OF DELAWARE RIVER, AT LAMBERTVILLE, N. J.

1906 DAY.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1,	5.00	5.05	5.45	8.10	4.95	5.35	4.45	4.55	4.20	2.65	5.05	4.70
2,	4.90	4.80	5.00	7.55	4.90	5.15	4.30	4.45	3.95	2.70	5.00	4.60
3,	4.60	4.85	5.45	6.95	4.80	4.95	4.35	4.60	3.85	2.60	4.90	4.60
4,	5.55	4.70	11.10	6.55	4.80	4.75	5.35	5.10	3.70	2.80	4.80	4.50
5,	5.65	----------	11.80	6.40	4.75	4.55	5.25	5.00	3.90	4.65	4.80	4.10
6,	5.35	----------	8.80	7.05	4.75	4.40	4.95	4.75	3.75	4.15	4.55	4.15
7,	5.55	----------	7.20	7.85	4.70	4.75	4.75	4.55	3.55	3.80	4.40	4.40
8,	5.20	----------	6.65	7.20	4.60	4.95	4.45	4.30	3.35	3.55	4.35	5.30
9	4.80	----------	6.20	6.85	4.65	4.90	4.20	4.25	3.20	3.40	4.30	5.10
10,	4.65	----------	6.05	8.35	4.75	4.85	4.10	4.30	3.00	3.25	4.25	4.75
11,	4.60	----------	5.95	9.40	4.75	4.80	4.05	4.45	2.85	3.20	4.20	4.75
12,	4.50	----------	5.50	9.55	4.60	5.10	3.95	4.30	2.75	3.15	4.30	5.10
13,	4.90	4.10	5.40	8.25	4.55	4.95	3.75	4.10	2.70	3.10	4.35	4.85
14,	4.90	4.25	5.25	7.65	4.50	4.60	3.65	3.80	2.70	3.10	4.40	4.85
15,	4.90	4.35	4.95	8.50	4.40	4.35	3.50	3.70	2.50	3.00	4.35	4.80
16,	5.05	4.15	4.85	13.20	4.40	4.15	3.40	3.45	2.50	3.00	4.45	4.80
17,	5.05	4.10	4.75	11.40	4.35	4.15	3.40	3.30	2.45	2.90	4.35	5.05
18,	4.80	4.05	4.65	9.10	4.30	4.95	3.45	3.15	2.40	2.80	4.35	5.20
19,	4.85	3.90	4.85	8.10	4.25	6.90	3.40	3.10	2.40	2.70	4.85	5.00
20,	4.75	4.10	4.55	7.25	4.55	7.15	3.40	3.10	2.30	2.85	5.90	4.90
21.	4.60	4.30	4.40	6.95	4.35	6.15	3.65	3.05	2.35	4.85	6.70	5.10
22,	4.70	6.65	4.45	6.60	4.15	6.05	3.85	3.45	2.55	5.90	6.30	5.35
23,	4.85	6.15	4.45	6.05	4.10	5.95	4.45	3.50	2.75	5.45	6.10	5.35
24,	6.20	6.30	4.35	6.10	4.05	5.65	4.65	3.90	3.10	5.20	5.80	5.00
25,	7.50	6.15	4.30	6.05	3.95	5.25	4.55	4.10	3.05	5.00	5.45	4.60
26,	6.85	6.60	4.30	5.85	3.80	4.95	4.45	3.95	2.90	5.00	5.25	4.50
27,	6.00	6.85	4.50	5.65	3.90	4.70	4.25	3.85	3.05	5.60	5.05	4.50
28,	5.80	6.00	5.90	5.35	4.30	4.45	4.05	4.05	2.95	5.45	4.95	4.40
29,	5.65	----------	8.25	5.40	6.25	4.30	4.15	4.30	2.70	5.25	4.85	4.45
30,	5.25	----------	7.75	5.05	6.45	4.30	4.25	4.40	2.70	5.10	4.70	4.60
31,	5.20	----------	7.60	----------	6.10	----------	4.35	4.50	----------	4.95	----------	5.35

River frozen Feb. 5 to 12. Also probably more or less ice conditions during December.

MEAN DAILY GAGE HEIGHT, IN FEET, OF DELAWARE RIVER, AT LAMBERTVILLE, N. J.

1907. DAY.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1,	8.80	4.85	--------	6.45	4.85	4.00	4.70	2.40	2.50	5.85	6.45	5.40
2,	9.45	4.65	--------	5.90	4.70	4.60	4.55	2.40	2.40	5.50	6.05	5.35
3,	7.75	4.40	4.20	5.60	4.70	5.35	4.45	2.35	2.35	5.25	7.00	5.25
4,	7.15	4.50	3.45	5.35	4.95	5.40	4.25	2.30	3.20	5.00	7.85	5.20
5,	6.90	4.55	3.80	5.15	4.90	5.15	4.05	2.20	3.70	5.15	7.60	5.05
6,	6.85	--------	3.80	5.00	4.95	5.00	3.90	2.30	4.10	5.40	6.95	4.90
7,	6.35	--------	3.60	4.95	4.90	5.00	3.60	2.30	4.00	5.60	8.20	4.80
8,	6.10	--------	3.70	5.00	4.85	4.95	3.60	2.30	4.20	5.95	11.90	4.80
9,	6.45	--------	3.65	5.15	4.90	4.80	3.70	2.45	4.00	6.30	10.15	4.80
10,	6.95	--------	3.80	5.10	5.05	4.60	3.85	2.30	3.90	6.10	8.65	5.75
11,	6.35	--------	3.75	5.05	5.20	4.45	3.80	2.45	3.80	6.05	7.85	13.10
12,	6.20	--------	3.70	5.00	4.90	4.35	3.65	2.10	4.45	5.65	7.20	12.60
13,	6.20	--------	3.85	5.00	4.75	4.20	3.65	2.15	4.75	5.40	6.65	9.60
14,	6.15	--------	5.50	5.15	4.60	4.15	3.50	2.05	4.90	5.20	6.30	8.10
15,	6.00	--------	8.10	5.25	4.40	4.10	3.55	1.90	4.80	5.25	6.05	7.70
16,	5.90	--------	7.60	5.10	4.65	4.10	3.65	2.05	4.50	5.00	5.75	7.00
17,	5.70	--------	8.55	4.90	5.00	4.00	3.40	1.90	4.30	4.95	5.55	6.80
18,	5.20	--------	8.95	4.85	5.00	3.85	3.35	1.95	4.10	4.80	5.40	6.40
19,	5.10	5.60	8.80	4.75	5.00	3.75	3.45	1.95	3.95	4.55	5.75	6.10
20,	5.70	5.65	8.90	4.70	4.80	3.60	4.00	1.90	4.05	4.60	5.55	5.90
21	6.25	--------	7.90	4.60	4.40	3.60	3.80	2.40	4.05	4.60	5.40	5.65
22,	6.90	--------	7.20	4.55	4.35	3.75	3.40	2.65	4.30	4.60	5.50	5.40
23,	6.00	--------	7.40	4.40	4.30	3.85	3.35	2.70	4.70	4.55	5.50	6.35
24,	5.20	--------	9.20	5.10	4.20	3.80	3.20	2.85	6.55	4.50	5.85	7.70
25,	5.00	--------	9.15	5.10	4.15	3.70	2.95	3.30	5.80	4.50	6.20	9.75
26,	5.00	--------	8.10	5.20	4.10	3.70	2.85	3.50	5.20	4.50	5.95	8.55
27,	4.95	--------	7.40	5.25	4.10	3.70	2.70	3.35	4.95	4.50	5.80	7.50
28,	4.75	--------	7.00	5.20	4.10	4.00	2.70	3.15	4.60	6.05	5.70	7.00
29,	4.70	--------	6.90	5.20	4.35	3.85	2.50	2.75	7.10	6.85	5.55	6.70
30,	4.80	--------	7.20	5.05	4.35	4.15	2.50	2.60	6.30	7.80	5.45	7.00
31,	5.00	--------	6.85	--------	4.15	--------	2.35	2.50	--------	7.15	--------	7.10

River frozen Feb. 6-9, and probably Feb. 10-Mar. 2. Observer notes August 20, "put in dam at canal boat ferry ½ mile below bridge." Sept. 3, "closed channel in dam at ferry."

MEAN DAILY GAGE HEIGHT, IN FEET, OF DELAWARE RIVER, AT LAMBERTVILLE, N. J.

1908. DAY.	JAN.	FEB.	MAR.
1.	7.10	5.40	5.75
2.	6.85	--------	5.40
3.	6.30	--------	5.40
4.	5.90	4.80	5.40
5.	5.80	--------	5.30
6.	5.90	--------	5.40
7.	5.40	--------	5.35
8.	5.90	--------	5.75
9.	5.75	--------	5.90
10.	5.40	--------	5.65
11.	5.55	--------	5.20
12.	6.00	--------	5.70
13.	7.40	--------	6.00
14.	8.00	--------	6.70
15.	7.45	8.70	9.40
16.	6.75	13.00	9.40
17.	6.40	11.50	9.45
18.	6.05	8.40	8.20
19.	5.75	7.05	8.45
20.	5.55	6.95	8.85
21.	5.45	6.20	8.20
22.	5.30	5.90	7.30
23.	5.30	5.60	6.90
24.	5.35	5.25	6.90
25.	5.05	5.05	7.50
26.	4.90	7.00	8.45
27.	5.05	8.70	7.75
28.	4.95	6.75	8.45
29.	5.20	6.05	9.70
30.	5.00	--------	10.50
31.	4.70	--------	9.35

Feb. 2-10 "river frozen at gage."
Feb. 11-12 "river closed from shore to shore."
Feb. 13 "Ice on Pa. side went out in night."
Feb. 14 "Another portion went out."
Feb. 15 "All the rest went out 10:30 a. m."
Maximum 14.00 feet on Feb. 16.

The following estimated monthly discharge from 1897 to 1902 inclusive has been taken from the published reports of the United States Geological Survey. These data have been computed from a rating table determined from measurements made during that period.

ESTIMATED MONTHLY DISCHARGE, DELAWARE RIVER, AT LAMBERTVILLE, N. J.

(Drainage area 6,855 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1897.					
July (23-31),			28406	4.14	
August,	33420	7125	15440	2.25	2.59
September,	9550	2600	5120	0.75	0.84
October,	5475	2350	2948	0.43	0.50
November,	30060	2462	13214	1.93	2.15
December,	66540	10300	24845	3.62	4.17
1898.					
January,	49740	8100	21455	3.13	3.61
February,	61260	11900	28538	4.16	4.33
March,	48780	12700	27676	4.04	4.66
April,	39660	9125	18233	2.66	2.97
May,	45420	19050	29336	4.28	4.93
June,	23820	5750	10746	1.57	1.75
July,	10300	2500	4894	0.71	0.82
August,	38700	8450	18192	2.65	3.05
September,	18575	4350	8459	1.23	1.37
October,	28220	3500	12154	1.77	2.04
November,	42060	11100	23131	3.37	3.76
December,	34860	12700	20619	3.01	3.47
The year,	61260	2500	18619	2.72	36.76
1899.					
January (28 days),	38840	14625	21476	3.13	3.61
February (13 days),			25140	3.67	3.82
March,	63045	27850	39629	5.78	6.66
April,	57380	15900	34819	5.08	5.67
May,	14625	4100	8139	1.19	1.37
June,	10800	1750	3926	0.57	0.63
July,	11650	3700	6806	0.99	1.14
August,	10000	1900	5296	0.77	0.89
September,	28325	2440	9105	1.33	1.48
October,	13775	4100	6343	0.93	1.07
November,	14625	5050	10249	1.50	1.67
December,	22150	6650	12755	1.86	2.14
1900.					
January (12-27),	43475	6100	17527	2.56	2.96
February (4-28),	81070	15900	33100	4.83	5.03
March,	87250	9250	23478	3.42	3.95
April,	37295	10000	16660	2.43	2.71
May,	20300	5300	9553	1.39	1.60
June,	8225	2300	5260	0.77	0.86
July,	11225	1900	5186	0.76	0.88
August,	5050	2000	3066	0.45	0.52
September,	5300	2000	2975	0.43	0.48
October,	3900	1525	2341	0.34	0.39
November,	14625	2000	4281	0.62	0.69
December (21 days),	20300	5050	10126	1.48	1.71

ESTIMATED MONTHLY DISCHARGE, DELAWARE RIVER, AT LAMBERTVILLE, N. J.

(Drainage area 6,855 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1901.					
January,	16325	2300	6192	.90	1.04
February,			a2500	.37	0.38
March,	74890	2600	23268	3.39	3.91
April,	64075	15475	31811	4.64	5.18
May,	65620	14625	24524	3.58	4.13
June,	48110	5300	16902	2.47	2.76
July,	10000	1825	4676	.68	0.78
August,	69740	2300	16285	2.38	2.74
September,	21200	5300	10785	1.57	1.75
October,	18050	5550	9542	1.39	1.60
November,	10800	4320	6680	.97	1.08
December,	161410	6375	31366	4.58	5.28
The year,		1825	15377	2.24	30.63
1902.					
January, b			c20017	c2.92	c3.37
February, b					
March,	171813	20750	55811	8.14	9.38
April,	49140	10000	24039	3.51	3.92
May,	24525	5550	10701	1.56	1.80
June,	14200	4550	6848	1.00	1.12
July,	26900	5550	16352	2.39	2.76
August,	25475	3125	9310	1.36	1.41
September,	88280	2300	12922	1.89	2.11
October,	72315	10000	28250	4.12	4.75
November,	27375	6650	11323	1.65	1.84
December,	96520	8550	29351	4.28	4.93

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a Approximate.
b Frozen Jan. 14-19, Jan. 30-Feb. 1, and Feb. 4-25.
c Estimated.

DELAWARE BASIN—STATION NO. 17.

NESHAMINY CREEK BELOW THE FORKS, NEAR RUSHLAND, PA.

Neshaminy creek rises in the eastern part of Montgomery County, Pa., flows in a southeasterly and southerly course, and enters Delaware river at a point about 12 miles above Philadelphia. The drainage area, measured at the forks of the Big and Little Neshaminy, is 139 square miles, mostly farm land in a high state of cultivation, the original forest growth having been almost entirely cut away. The stream is subject to very sudden freshets, and during heavy rains large quantities of surface soil are eroded. The fall of the stream from its source to the gaging station is about 600 feet in 27 miles. The average yearly rainfall over this watershed is from 40 to 50 inches.

The gaging station is located a short distance below the junction of Big and Little Neshaminy creeks, and the discharge represents about one-half of the total drainage area of the stream. Continuous records of discharge have been obtained since 1884 by the Philadelphia Bureau of Water, Department of Public Works, under the personal supervision of John E. Codman, by whom the records have been furnished.

An automatic gage is used to obtain a continuous record of gage height. The lower part of the rating curve has been developed from the computed discharge over a weir, and the discharge at high stages is determined from a curve developed from current meter measurements. The rating curve is well defined.

The following data have been furnished by the United States Geological Survey, and the Philadelphia Bureau of Water.

DAILY DISCHARGE, IN SECOND FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1884. DAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	----------	24	116	15	5	13	55
2,	----------	19	101	11	5	14	44
3,	----------	27	56	10	6	12	26
4,	----------	25	57	10	6	8	20
5,	----------	235	436	12	8	16	23
6,	----------	905	462	8	8	18	235
7,	----------	146	105	6	6	19	1907
8,	----------	76	69	6	5	15	192
9,	----------	48	48	4	5	15	98
10.	12	36	38	4	5	11	74
11,	12	27	34	4	5	7	56
12,	14	27	31	4	5	7	841
13,	17	22	28	4	4	6	414
14,	15	17	25	4	4	7	166
15,	12	19	22	3	3	8	2354
16,	10	18	22	4	3	6	336
17,	12	14	17	4	3	5	173
18,	13	14	20	5	4	5	157
19,	9	18	21	5	6	5	175
20,	10	16	16	4	6	9	200
21	8	13	18	4	5	10	363
22,	7	15	18	5	5	5	959
23,	5	16	17	5	5	3	940
24.	5	14	17	5	5	441	937
25,	6	15	17	5	4	110	811
26,	2271	17	17	4	4	47	710
27,	331	17	13	4	4	29	684
28,	80	14	10	4	4	24	693
29,	56	22	13	5	7	180	693
31,	----------	36	18	----------	12	----------	1161
30,	31	29	20	5	11	124	1053

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1885.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	666	139	74	334	46	19	7	3	9	1	29	117
2,	215	128	284	222	52	22	4	4	6	1	722	97
3,	125	142	343	137	55	14	4	723	4	1	207	93
4,	120	146	492	1761	47	15	4	2377	3	8	91	88
5,	130	156	1053	450	44	15	3	94	5	6	55	76
6,	1886	150	948	206	38	9	4	39	7	5	44	109
7,	823	137	456	154	63	10	41	17	4	6	38	122
8.	342	138	208	168	474	13	28	18	3	6	190	138
9.	252	1714	137	181	222	13	10	17	4	5	746	109
10,	204	4484	80	120	141	11	7	16	5	4	179	216
11,	151	1067	84	117	[illegible]	11	7	16	2	7	106	157
12.	1377	631	78	121	78	10	4	15	4	2	82	76
13,	355	260	65	115	66	8	3	11	5	42	71	667
14,	190	156	114	93	57	6	4	11	5	67	70	1803
15,	220	131	136	87	44	6	4	7	4	28	57	457
16,	653	3454	169	88	44	9	3	9	4	16	44	213
17,	1026	2423	160	80	44	10	5	6	4	11	43	167
18,	233	209	84	80	37	7	3	7	3	8	38	151
19,	268	133	85	67	34	5	3	6	4	5	35	144
20,	249	96	69	50	32	9	4	6	3	7	28	111
21,	173	89	60	47	28	8	4	6	4	63	27	97
22,	190	85	52	46	28	6	5	9	2	103	23	104
23,	242	82	48	42	31	4	3	7	4	54	325	96
24	236	76	46	42	31	4	3	4	3	31	670	97
25,	227	81	42	50	26	6	2	4	2	16	543	84
26,	182	87	78	55	29	7	2	6	3	11	378	99
27.	197	54	138	55	26	5	2	8	2	11	267	134
28,	255	33	126	54	20	5	2	7	1	11	164	116
29,	231	----------	111	58	20	9	2	5	2	10	136	77
30,	220	----------	161	54	21	9	2	5	1	44	134	63
31,	192	----------	298	----------	22	----------	2	8	----------	54	----------	114

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1886.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	209	452	165	1637	59	64	38	36	8	4	14	46
2,	109	415	154	391	48	49	35	33	8	3	13	48
3,	83	380	143	270	51	53	32	32	6	3	10	59
4,	141	425	132	252	48	53	29	24	7	4	9	89
5,	2478	350	121	423	49	45	26	20	4	3	10	64
6,	413	300	109	4734	41	39	28	18	5	2	9	46
7,	195	250	97	1198	51	35	22	26	6	2	7	57
8	265	200	94	513	2346	36	20	33	5	2	7	87
9,	599	175	92	371	749	35	19	46	6	2	10	68
10,	601	150	88	303	227	45	182	31	4	2	11	74
11,	574	5767	78	231	168	49	149	24	4	4	11	85
12,	417	5132	77	207	140	37	48	18	4	2	10	64
13,	346	4195	89	293	218	29	32	19	3	2	85	105
14,	322	830	77	319	566	194	27	16	4	2	74	342
15,	307	508	84	207	232	291	44	13	5	2	27	345
16,	300	528	75	168	615	100	294	12	10	2	27	393
17,	285	217	70	157	242	95	297	16	7	2	16	279
18,	272	173	66	139	159	108	100	11	7	2	26	649
19,	285	204	79	133	164	67	136	15	4	3	37	2228
20,	287	199	93	120	167	39	90	11	4	2	26	671
21,	372	202	902	108	155	34	58	9	6	3	17	278
22,	660	146	477	99	131	31	75	6	5	2	16	190
23,	580	127	216	93	173	732	62	6	4	3	111	133
24	375	122	141	90	134	315	48	6	4	3	203	203
25,	330	694	132	85	113	149	31	7	3	3	160	662
26,	321	1103	122	93	108	276	60	8	6	4	770	212
27	390	189	128	86	89	111	598	6	3	11	194	175
28,	1744	177	439	81	96	73	114	6	4	28	64	145
29,	3735	----	456	76	85	63	73	4	2	38	52	228
30,	1269	----	1389	65	67	45	42	9	2	25	50	178
31,	615	----	1870	----	59	----	41	9	----	15	----	229

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1887.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	323	239	296	204	115	208	42	144	21	47	37	40
2,	580	156	262	202	105	137	41	149	24	33	34	39
3,	434	220	335	228	96	104	34	218	22	33	28	26
4,	344	203	195	222	87	101	30	139	17	31	27	29
5,	254	204	162	177	83	53	132	88	23	23	22	23
6,	221	165	186	147	76	39	1570	73	19	22	25	55
7,	193	612	324	124	160	107	223	73	20	18	19	48
8,	181	742	719	121	310	158	135	65	18	18	23	40
9,	138	625	545	111	244	84	150	50	23	20	18	29
10,	181	337	828	107	148	54	942	44	18	21	24	176
11,	181	767	405	107	118	44	146	108	14	21	52	1648
12,	159	552	221	92	91	35	89	236	492	19	47	400
13,	153	189	213	81	77	31	66	67	229	14	28	199
14,	740	223	196	77	69	26	53	44	83	19	21	153
15,	940	597	160	78	56	23	47	41	54	17	33	610
16,	420	504	154	80	56	28	40	41	43	14	28	607
17,	230	370	139	69	55	24	56	36	28	13	29	210
18,	300	1344	129	210	48	35	58	92	26	18	23	277
19,	210	1703	120	359	47	50	39	71	27	13	26	303
20,	160	430	110	118	38	34	40	40	23	18	31	249
21,	130	321	109	134	34	29	35	30	26	398	51	411
22,	220	406	413	108	33	411	38	37	24	139	44	447
23,	590	376	551	294	32	3159	462	64	22	63	37	289
24,	2891	630	437	663	41	412	1047	379	20	43	31	248
25,	628	314	691	203	53	179	484	288	21	36	29	169
26,	490	294	432	275	86	119	177	84	20	34	27	175
27,	532	1210	255	205	44	102	282	45	20	34	26	145
28,	400	454	2185	153	39	81	134	42	26	29	29	1597
29,	1661	----------	521	191	25	62	147	39	41	31	61	913
30,	900	----------	246	154	33	51	121	32	74	27	38	364
31,	408	----------	235	----------	32	----------	141	31	----------	32	----------	435

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1888.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	4890	233	160	376	77	65	19	10	12	68	131	178
2,	2786	235	145	306	72	42	13	11	13	75	124	152
3,	505	230	139	262	72	39	15	11	15	65	114	140
4,	388	285	114	211	72	36	13	9	15	50	106	135
5,	323	1553	95	295	63	31	13	7	12	47	97	131
6,	267	2111	162	2227	51	31	15	7	9	191	93	139
7,	310	798	77	428	51	29	13	7	9	212	87	136
8,	636	389	101	254	54	22	10	17	224	130	84	120
9,	404	308	95	206	48	25	14	21	376	74	91	118
10,	261	310	88	631	48	24	22	14	134	57	171	132
11,	251	313	602	1394	78	21	21	11	129	52	347	135
12,	432	283	1571	341	129	23	14	78	474	53	137	118
13,	682	230	338	271	103	17	11	206	280	68	105	80
14,	493	220	375	242	75	15	10	154	174	69	100	178
15,	356	220	432	197	61	17	9	22	88	63	1821	248
16,	287	235	564	781	58	19	11	20	84	53	588	131
17,	342	287	743	557	57	14	12	15	1052	69	301	3759
18,	455	362	565	200	48	10	11	9	3099	63	209	1821
19,	480	587	367	171	52	16	10	7	401	63	877	431
20,	477	2112	1001	160	61	20	11	6	227	68	560	311
21,	288	2675	3126	154	56	20	11	29	1710	69	258	230
22,	199	579	1455	125	40	14	8	1500	319	54	193	253
23,	206	411	350	119	36	65	10	153	185	60	166	365
24,	251	265	264	119	40	57	11	55	151	101	153	354
25,	172	3619	248	97	40	14	9	36	132	132	150	302
26,	151	938	449	88	45	15	9	15	135	82	245	209
27,	186	368	1887	80	43	11	65	19	125	406	671	351
28,	175	228	783	80	42	8	125	20	92	688	345	553
29,	195	191	1485	72	95	15	24	15	72	459	218	329
30,	226	----------	578	68	130	24	19	14	64	209	196	127
31,	232	----------	489	----------	91	----------	19	13	----------	151	----------	135

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1889.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	139	183	101	87	214	312	94	1760	53	185	244	324
2,	140	140	114	558	182	293	346	1083	58	179	216	275
3,	131	154	484	250	154	158	649	1047	51	155	616	263
4,	116	159	3197	198	138	120	905	761	53	133	526	238
5,	197	144	1364	156	122	122	598	705	44	126	254	203
6,	940	120	503	139	108	116	247	480	38	117	212	197
7,	490	214	296	120	105	95	168	595	41	123	186	188
8,	260	328	215	111	89	88	135	296	50	106	180	207
9,	552	188	169	111	80	96	113	228	41	94	2879	333
10,	776	116	142	96	80	97	94	321	44	94	1044	109
11,	275	102	133	92	72	93	124	239	57	91	461	176
12,	200	110	131	88	71	143	158	174	108	87	364	182
13,	166	124	131	92	77	120	490	152	777	267	1422	223
14,	157	133	137	84	108	141	332	746	381	208	1179	270
15,	145	118	138	72	134	89	3386	2046	835	401	276	338
16,	144	396	130	65	86	172	425	188	463	213	296	228
17,	800	738	115	61	59	118	237	226	2560	137	253	288
18,	449	1116	115	68	50	301	173	186	2947	113	253	443
19,	227	294	115	60	41	108	180	163	618	98	2965	378
20,	148	177	116	51	822	61	3950	152	429	92	868	299
21,	970	125	263	59	781	57	401	136	376	116	547	250
22,	497	92	937	68	301	54	263	133	281	138	888	214
23,	286	88	475	62	180	43	208	132	216	133	409	184
24,	255	97	253	61	127	40	169	149	198	172	324	168
25,	387	110	204	48	100	40	148	130	990	137	668	156
26,	394	99	169	689	215	562	132	110	564	102	458	142
27,	1130	89	146	2258	738	400	201	105	384	3749	1171	222
28,	872	87	143	1121	538	148	231	89	242	967	3528	211
29,	361	----------	141	501	403	92	174	72	201	388	415	128
30,	213	----------	122	284	330	80	528	65	184	274	407	121
31	214	----------	89	----------	141	----------	5531	49	----------	232	----------	116

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1890.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	107	135	722	346	115	95	30	38	46	28	145	52
2,	110	114	347	351	87	80	33	41	31	32	135	72
3,	108	157	306	250	68	53	135	27	27	391	130	91
4,	101	163	197	610	64	53	566	20	25	188	123	137
5,	108	192	178	626	114	48	107	31	26	88	102	144
6,	130	147	282	272	138	65	56	21	26	67	90	102
7,	128	111	229	228	191	65	44	27	20	135	90	116
8	113	2848	141	270	132	43	42	19	18	129	89	192
9,	97	974	132	666	175	35	29	28	21	133	85	190
10,	90	293	149	639	96	35	27	17	18	78	79	103
11,	92	250	581	280	75	112	19	16	19	83	116	81
12.	80	228	560	219	76	1150	17	16	26	75	140	85
13,	84	212	282	180	78	667	15	13	29	64	114	165
14,	84	526	1203	159	70	272	17	10	29	77	95	106
15,	1591	601	1309	149	142	279	30	10	55	74	85	74
16,	800	237	544	139	223	225	22	14	180	64	75	83
17,	281	192	323	119	87	75	19	27	147	564	118	276
18,	187	189	290	105	62	70	60	27	61	188	231	848
19,	150	339	261	96	49	60	33	27	50	130	120	193
20,	281	1101	315	88	165	51	19	26	38	136	84	355
21,	293	331	1939	86	264	65	19	222	31	136	85	182
22,	144	197	2990	85	94	76	21	670	29	146	81	106
23,	170	266	1512	71	63	56	20	118	20	585	73	115
24	159	213	500	74	52	41	17	50	20	2400	68	105
25,	155	266	404	97	47	48	21	38	19	783	72	120
26,	110	278	473	101	192	43	415	37	27	341	68	165
27	119	210	320	96	1986	39	180	163	40	240	66	201
28,	119	357	1419	104	309	29	59	48	33	198	52	189
29,	101		635	87	168	27	113	56	23	203	70	173
30,	162		367	61	126	27	54	54	29	204	52	157
31,	182		313		102		34	58		167		130

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1891.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	128	1585	370	379	51	34	16	77	164	27	41	91
2,	1953	773	242	252	41	35	17	80	128	22	37	74
3,	844	739	212	931	57	27	20	89	101	17	39	50
4,	275	588	289	362	83	26	24	53	85	17	29	347
5,	371	263	269	247	57	30	20	39	555	18	35	994
6,	605	200	196	206	56	27	15	36	1939	22	43	199
7,	527	334	202	184	57	28	16	30	341	26	37	920
8,	376	623	266	155	41	38	22	21	203	26	39	443
9,	308	786	994	152	36	37	26	18	154	26	39	205
10,	253	981	1291	137	40	28	22	33	129	26	35	167
11,	1377	423	443	226	34	26	20	33	106	21	54	142
12,	1594	306	689	402	38	22	22	20	93	19	75	167
13,	354	261	1662	226	39	20	17	20	84	23	75	99
14,	185	225	538	164	31	18	19	17	77	17	57	99
15,	147	193	275	140	30	23	21	40	63	12	39	100
16,	140	1419	303	131	51	22	19	56	54	19	39	105
17,	283	1156	242	136	47	25	17	38	51	19	48	97
18,	805	640	213	134	28	126	16	38	45	19	98	94
19,	279	350	201	114	31	58	127	299	39	17	87	93
20,	223	360	266	104	33	41	91	86	34	328	60	61
21,	191	906	3446	93	26	36	40	47	31	194	48	57
22,	3257	1135	789	93	31	42	29	27	27	155	42	76
23,	768	415	1053	93	36	38	26	43	27	340	91	1495
24,	356	332	512	86	31	29	26	3276	27	121	261	1630
25,	930	334	358	77	26	73	24	1264	27	63	123	1040
26,	642	569	288	55	26	20	19	278	31	48	94	5218
27,	506	553	248	55	30	19	14	182	27	101	109	650
28,	430	368	239	66	30	15	19	335	22	109	239	261
29,	1084	------	222	62	37	16	150	208	27	58	105	299
30,	1679	------	196	67	34	16	214	267	31	52	81	1070
31,	935	------	182	------	31	------	122	248	------	52	------	674

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1892.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	999	191	2582	179	79	118	39	69	15	5	6	149
2,	1870	179	554	167	107	102	82	51	14	6	6	106
3,	743	174	329	179	133	103	297	51	12	5	6	102
4	293	159	259	174	114	99	519	35	11	4	7	80
5,	242	149	269	154	86	92	144	20	10	4	7	77
6,	194	144	221	144	73	111	73	23	13	4	5	68
7,	200	135	207	133	73	107	53	20	13	4	5	59
8,	192	129	1359	121	55	79	42	18	8	5	6	68
9,	180	131	942	119	50	93	34	17	6	6	8	101
10,	178	122	389	110	55	140	31	17	6	5	32	93
11,	144	120	309	99	55	130	31	21	7	4	99	68
12.	146	115	257	96	50	80	31	60	7	5	43	51
13,	3584	125	214	92	50	58	31	52	8	5	19	60
14,	2364	121	155	102	59	53	31	25	96	6	19	417
15,	767	93	159	186	437	48	48	17	17	6	734	559
16,	408	81	149	193	215	39	31	19	15	5	2346	236
17,	363	81	130	108	127	34	31	15	15	5	234	162
18,	444	81	125	97	84	36	22	18	11	8	605	112
19,	2172	77	135	99	144	36	31	17	10	8	643	85
20,	731	82	144	87	459	31	24	15	10	5	184	130
21,	382	93	135	93	341	32	16	13	10	4	114	220
22,	322	115	114	152	419	32	14	10	10	4	86	97
23,	280	124	117	185	492	29	14	11	9	5	89	132
24	250	108	386	161	297	26	15	12	9	5	56	214
25,	257	103	502	109	177	72	16	16	13	6	45	122
26,	280	159	409	94	165	54	16	21	19	7	39	241
27.	332	184	900	90	756	75	15	22	10	5	54	119
28,	331	125	1026	88	376	109	15	19	7	5	241	101
29,	286	117	440	88	187	69	19	19	4	5	611	106
30,	273	----------	251	88	154	37	191	16	3	4	243	115
31,	233	----------	209	----------	142	----------	101	13	----------	5	----------	120

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1893.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	1357	385	463	133	362	57	23	14	59	26	61	175
2,	1678	568	599	116	318	57	23	11	54	21	59	154
3,	227	741	481	102	646	57	25	10	48	23	59	217
4,	150	692	281	109	3154	46	21	7	39	24	1281	1938
5,	125	540	710	98	571	54	18	7	35	21	1759	316
6,	125	484	199	85	894	73	18	7	28	20	352	274
7,	100	1590	169	98	420	154	17	9	29	22	221	211
8,	90	714	326	153	512	75	20	11	34	21	188	253
9,	130	307	2337	140	[illegible]	51	21	9	31	30	241	186
10,	135	2727	2394	177	404	45	20	7	27	27	179	305
11,	120	869	943	380	158	39	23	7	27	24	139	325
12	150	398	2436	198	176	36	22	6	31	24	124	186
13,	140	861	920	153	159	39	19	6	31	23	115	144
14,	140	1299	683	544	149	41	17	5	31	70	115	258
15,	130	1136	895	2448	144	39	15	6	53	77	303	205
16,	135	858	358	467	273	36	15	8	749	34	234	1323
17,	140	495	302	290	617	36	18	9	258	28	131	999
18,	176	625	273	229	223	35	19	12	107	25	120	330
19,	168	371	251	198	161	33	15	11	76	21	109	325
20,	175	395	236	742	135	27	15	174	56	20	94	148
21,	165	484	244	1012	117	24	14	254	48	21	101	170
22,	154	404	244	831	108	29	12	63	41	18	330	160
23,	154	385	232	298	105	284	9	29	36	199	213	146
24	154	309	272	235	105	90	9	1692	32	263	135	144
25,	149	258	285	213	89	42	11	197	29	119	99	152
26,	154	179	232	221	72	39	11	80	39	64	91	154
27,	147	194	184	418	72	45	10	43	33	40	112	120
28,	136	242	156	362	72	35	8	31	29	481	1500	102
29,	164	----------	139	232	77	35	14	1078	33	206	996	119
30,	215	----------	133	205	77	29	9	214	30	104	210	133
31,	321	----------	133	----------	63	----------	8	90	----------	88	----------	124

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1894.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	107	115	198	128	97	368	68	32	7	40	428	115
2,	109	110	227	110	86	285	43	19	8	47	196	268
3,	100	90	882	97	98	247	37	400	8	41	1371	315
4,	89	58	936	111	95	233	34	145	6	45	640	161
5,	98	60	776	189	80	231	36	48	6	71	860	133
6,	130	58	777	142	68	280	165	31	6	65	866	124
7,	136	57	698	112	76	315	177	56	5	43	245	110
8,	116	60	416	115	80	235	75	61	857	34	342	229
9,	105	1063	313	114	68	194	51	28	1247	41	464	616
10,	97	757	291	113	57	161	40	14	102	1715	313	257
11,	88	517	277	146	43	144	34	16	108	380	258	629
12,	88	267	243	363	39	130	36	15	73	173	198	1824
13,	88	164	380	1521	39	127	34	67	36	164	179	853
14,	76	164	355	833	42	127	29	82	28	250	175	241
15,	73	130	171	490	45	116	26	24	28	172	165	300
16,	88	250	178	303	39	97	101	23	23	110	149	257
17,	92	114	171	239	36	92	212	20	19	106	170	228
18,	82	1630	144	198	36	94	60	15	1001	90	227	194
19,	78	1990	144	174	36	87	31	11	3197	78	176	172
20,	81	1185	141	166	685	77	31	16	797	72	145	159
21,	79	603	136	188	9012	72	31	22	245	63	150	147
22,	83	399	179	418	4036	69	23	22	148	59	170	149
23,	88	366	571	291	823	60	21	11	111	59	154	145
24	88	287	279	186	3779	51	26	15	91	60	152	125
25,	96	204	194	159	1523	51	29	13	81	200	143	135
26,	80	105	182	141	532	82	27	14	81	233	125	135
27,	75	147	159	122	277	89	22	14	62	125	120	135
28,	88	200	131	114	2893	60	22	10	46	93	112	135
29,	67	----------	149	109	2036	45	19	8	48	82	103	130
30,	108	----------	164	105	553	65	19	7	40	79	96	130
31,	188	----------	152	----------	443	----------	44	7	----------	790	----------	111

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMI NY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1895.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	155	156	1217	160	192	46	528	27	8	6	27	15
2,	98	98	1019	249	145	42	148	20	8	6	31	27
3,	117	106	584	367	118	82	74	18	9	4	30	76
4,	98	147	533	231	98	95	59	1225	10	5	15	50
5,	98	201	475	163	87	95	664	526	11	5	17	45
6,	156	189	265	142	88	157	616	94	8	5	16	51
7,	357	176	321	124	88	126	202	54	7	5	17	40
8	891	176	1531	2542	82	56	115	43	7	6	12	25
9,	818	176	694	3234	74	41	92	34	6	7	11	50
10,	579	188	594	584	72	38	73	29	6	7	9	56
11,	2289	188	605	359	63	41	49	20	6	7	8	27
12.	830	176	273	280	56	48	44	71	6	8	7	16
13,	550	176	723	661	65	134	48	70	6	16	9	8
14,	349	188	1632	755	76	145	40	40	6	29	8	6
15,	295	178	396	338	78	62	35	29	5	34	8	6
16,	295	177	292	253	71	44	39	22	6	27	9	6
17,	295	175	240	204	59	36	48	22	7	22	7	6
18,	150	182	376	182	53	34	48	17	8	19	7	7
19,	150	201	625	168	47	31	39	13	7	15	13	10
20,	164	242	526	152	41	28	26	19	7	13	9	10
21,	188	323	287	136	65	25	19	20	7	8	10	9
22,	191	385	363	130	88	26	32	14	6	7	9	89
23,	166	385	253	130	71	31	39	13	5	6	7	81
24	150	258	292	118	48	29	39	10	5	5	8	43
25,	120	242	445	107	41	25	36	9	5	5	7	27
26,	2053	287	450	101	39	49	28	9	5	5	11	23
27,	479	368	247	127	165	89	24	13	5	5	34	32
28,	203	903	213	261	225	202	21	13	4	5	28	37
29,	178	----------	190	159	105	106	18	11	6	6	18	32
30,	178	----------	160	187	63	78	25	10	6	6	15	24
31,	178	----------	149	----------	48	----------	31	10	----------	9	----------	573

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1896.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	186	39	960	286	81	24	27	71	11	155	28	299
2,	83	45	463	286	65	22	22	48	8	60	30	193
3,	69	51	99	260	51	22	24	37	8	38	33	115
4,	72	51	57	217	63	22	24	35	10	31	36	115
5,	55	63	57	172	59	17	19	30	75	29	1305	100
6,	32	8707	101	154	39	17	17	24	673	33	579	90
7,	48	2535	127	164	44	20	22	25	214	29	220	90
8	36	600	111	154	41	17	87	30	65	24	106	120
9,	23	635	88	135	30	18	57	31	32	26	289	307
10,	19	624	85	129	23	66	86	22	22	24	119	252
11,	19	383	82	129	25	46	71	17	20	19	115	154
12	15	228	102	125	38	31	29	25	15	44	154	130
13,	14	187	91	125	42	24	22	23	14	1480	169	125
14,	14	282	79	120	34	196	20	28	17	345	135	100
15,	15	379	92	110	31	236	17	74	14	206	102	95
16,	15	274	81	93	31	73	17	36	13	129	88	90
17,	15	121	77	82	31	52	17	22	593	100	88	95
18,	19	119	118	93	61	138	16	17	765	74	85	95
19,	19	110	5408	92	31	72	13	17	290	62	80	80
20,	23	109	1994	81	31	35	13	17	169	51	73	75
21,	31	88	715	135	31	29	13	14	57	53	66	75
22,	27	90	414	147	31	26	1373	11	40	51	69	60
23,	32	85	309	97	31	29	499	10	33	43	72	55
24	565	75	250	88	31	31	166	14	26	61	72	54
25,	377	84	211	97	31	36	92	14	26	63	72	52
26,	142	85	349	97	31	54	68	10	24	59	68	50
27,	59	66	403	88	31	50	77	10	19	53	64	50
28,	53	70	257	85	110	32	97	14	17	37	143	50
29,	59	1542	2061	81	135	43	180	15	21	33	869	45
30,	43		760	81	61	43	561	12	308	38	385	40
31,	36		389		86		155	13		40		30

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1897.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	88	41	88	93	76	445	45	221	43	17	80	105
2,	88	41	115	77	1610	115	42	184	41	13	1354	94
3,	121	41	169	71	439	84	42	115	41	13	287	91
4,	209	41	290	65	239	124	41	105	37	13	108	118
5,	351	41	190	131	179	273	37	105	32	17	81	1305
6,	233	1094	360	166	135	130	32	97	31	17	71	396
7,	125	2973	208	125	111	84	29	85	31	15	42	204
8,	125	840	144	99	92	103	29	77	31	15	36	155
9,	107	334	144	1750	80	4677	31	80	31	12	61	144
10,	80	166	160	606	75	774	31	83	27	10	74	136
11,	72	135	160	272	97	224	27	86	28	13	60	126
12,	72	115	220	205	96	216	27	83	30	15	55	336
13,	57	110	220	166	2215	228	36	63	28	15	49	314
14,	41	94	171	144	755	202	75	54	29	15	39	2436
15,	48	72	215	208	800	159	61	64	27	15	37	2696
16,	48	63	149	218	235	144	36	289	24	14	40	492
17,	41	54	129	164	190	137	31	160	23	11	41	318
18,	41	48	135	145	150	131	31	67	22	13	41	245
19,	41	41	179	125	140	124	140	54	19	15	41	197
20,	93	48	700	107	126	117	356	63	19	15	40	175
21,	1856	131	328	88	164	112	367	66	21	15	40	175
22,	369	529	209	88	165	97	3083	64	22	14	41	173
23,	139	1826	170	88	117	76	1256	53	24	14	39	162
24,	97	301	469	88	127	73	630	1075	27	14	39	154
25,	73	105	327	80	711	85	391	209	27	59	36	154
26,	48	89	189	84	185	74	181	119	23	85	36	154
27,	48	63	154	84	110	53	491	93	21	48	1033	154
28,	36	63	139	72	84	59	2119	73	21	27	238	171
29,	31	----------	129	66	74	56	900	60	21	22	142	166
30,	31	----------	125	66	77	48	298	50	21	19	124	154
31,	36	----------	115	----------	628	----------	214	49	----------	16	----------	539

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1898.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	377	164	164	249	193	115	29	32	24	12	65	436
2,	340	164	160	150	162	105	29	251	17	8	39	300
3,	340	164	160	176	147	105	21	65	14	6	31	288
4,	233	164	164	159	138	97	15	41	14	7	24	1777
5,	135	164	154	164	129	117	15	105	13	7	19	3059
6,	125	164	144	164	140	110	23	119	14	7	17	511
7,	105	164	144	164	362	69	25	36	14	6	25	304
8,	101	164	139	199	3153	62	22	22	16	8	27	218
9,	92	189	131	131	846	62	22	22	20	7	24	147
10,	88	213	127	122	378	55	26	32	17	7	933	144
11,	97	294	122	120	303	45	15	397	12	9	852	135
12,	188	566	115	133	349	43	16	99	13	10	239	125
13,	257	530	109	123	483	48	17	57	11	14	165	115
14,	215	258	106	115	254	51	17	36	9	13	125	105
15,	633	228	97	195	1473	45	16	32	8	10	125	105
16,	553	313	88	136	1060	45	22	27	10	7	85	105
17,	264	105	88	125	983	48	19	22	14	8	161	105
18,	166	130	90	105	886	42	14	228	11	8	373	93
19,	139	387	87	105	329	31	17	1615	7	14	3529	85
20,	493	5076	77	105	349	34	14	278	6	13	552	1006
21,	654	1205	108	93	439	48	58	113	6	24	268	293
22,	398	691	196	81	258	31	66	65	7	49	202	480
23,	2985	445	349	77	213	28	36	45	9	49	828	1670
24	476	330	273	294	258	34	22	36	11	27	484	408
25,	313	273	164	400	280	34	18	31	13	24	355	203
26,	554	221	166	254	250	36	20	31	12	59	269	149
27,	462	200	175	189	242	31	22	31	14	176	242	129
28,	267	182	246	645	209	34	22	27	14	87	445	115
29,	215		391	782	170	34	19	22	11	40	322	110
30,	176		1232	574	157	29	17	26	13	28	464	90
31,	164		420		138		14	29		81		161

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1899.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	527	213	611	349	67	31	15	27	15	36	144	54
2,	453	213	569	280	73	31	13	248	15	31	154	51
3,	97	213	540	243	67	27	9	1262	28	31	162	48
4,	71	213	686	221	61	19	10	104	41	27	1257	57
5,	405	173	3687	201	53	17	14	43	32	22	252	54
6,	2105	119	913	176	50	17	13	23	19	38	145	48
7,	1298	97	593	255	47	13	10	15	15	59	107	41
8,	306	97	377	1047	45	13	13	15	15	53	85	41
9,	277	105	388	362	46	15	14	14	13	36	81	36
10,	213	97	343	245	38	19	14	488	43	27	81	36
11,	213	80	510	204	64	19	13	2577	38	22	81	36
12,	213	72	959	186	89	17	10	151	80	19	85	36
13,	213	72	1318	176	73	17	10	71	68	19	85	65
14,	228	72	407	166	53	15	10	48	23	22	77	80
15,	203	72	1172	159	48	15	8	36	15	19	72	60
16,	189	89	813	193	48	15	8	27	15	19	68	45
17,	457	319	242	301	43	15	9	22	15	22	68	36
18,	252	553	722	177	54	15	9	19	13	123	68	31
19,	145	574	2490	149	68	15	8	19	41	113	56	36
20,	115	974	742	139	57	15	6	17	430	57	51	57
21,	105	1373	382	129	36	15	6	14	166	41	48	72
22,	105	1373	1765	115	36	15	6	19	138	32	41	57
23,	100	1402	976	105	45	15	6	19	65	27	77	41
24	1117	849	405	105	51	13	6	19	41	27	147	792
25,	1927	446	414	105	47	11	6	19	41	22	90	401
26,	333	809	490	105	36	13	11	13	578	22	74	125
27,	242	3950	417	101	31	13	23	11	204	22	72	89
28,	213	815	1308	92	31	13	27	13	89	17	63	72
29,	213	--------	2417	88	27	14	22	13	63	24	63	72
30,	213	--------	588	73	22	15	325	14	48	17	63	63
31,	213	--------	443	--------	27	--------	68	15	--------	24	--------	48

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1900.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	60	173	2675	105	64	47	31	36	17	15	11	39
2,	63	194	1434	105	52	41	27	31	11	11	11	34
3,	48	182	725	110	40	41	22	27	10	8	13	31
4,	57	188	431	110	44	41	22	22	10	14	15	711
5,	80	2302	209	105	40	37	52	19	10	10	15	635
6,	88	533	205	105	33	31	59	15	9	10	15	153
7.	88	521	224	102	36	26	42	15	8	9	15	123
8,	88	1330	228	97	40	27	51	15	8	8	13	102
9,	88	1244	213	96	41	39	54	15	8	11	10	59
10,	88	339	201	84	44	45	43	15	8	15	13	54
11,	97	322	176	76	45	41	27	14	8	13	13	54
12.	219	379	154	84	43	43	27	14	6	10	13	54
13,	2095	2235	135	87	41	38	31	78	5	10	11	48
14,	310	566	115	84	35	31	29	23	5	118	8	41
15,	374	358	105	78	31	33	24	16	7	52	9	41
16,	251	340	105	76	30	33	22	15	58	31	9	41
17,	250	191	147	82	26	36	20	15	27	27	8	36
18,	213	142	176	101	107	36	18	15	16	19	8	26
19,	250	142	154	470	3990	31	18	13	10	15	8	22
20,	295	173	1972	860	2449	31	14	10	10	15	9	22
21,	2588	139	457	583	277	31	10	9	10	15	9	22
22,	841	3163	214	230	134	24	10	14	8	15	8	22
23,	288	1865	175	147	139	26	21	10	6	15	9	22
24	183	930	139	116	216	24	27	13	8	14	9	22
25,	160	463	173	115	137	22	37	15	10	13	9	19
26,	153	338	115	99	156	19	250	11	8	11	840	15
27,	219	355	101	85	115	1221	94	14	6	10	223	19
28,	237	375	189	68	82	860	43	13	6	10	71	22
29,	147		146	64	61	104	23	85	6	13	48	22
30,	105		116	64	54	48	232	88	11	13	41	22
31.	119		105		58		73	22		10		290

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1901.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	180	41	72	129	164	242	31	107	1676	73	20	48
2,	65	41	71	115	159	213	31	80	358	59	18	48
3,	36	41	51	1774	189	509	31	72	257	54	18	379
4,	31	41	57	459	140	230	31	72	211	52	18	409
5,	31	41	80	343	105	157	31	63	154	48	20	279
6,	31	41	80	362	101	120	52	71	139	42	22	359
7,	31	41	72	627	96	159	192	1169	124	36	22	246
8,	31	41	63	316	91	210	217	456	110	39	22	145
9,	31	41	63	228	149	125	60	116	97	36	22	104
10,	31	41	143	180	672	97	65	80	88	31	22	113
11,	553	41	4624	146	821	88	36	72	499	34	20	111
12.	1965	41	469	129	599	80	1320	199	566	34	20	96
13,	323	41	237	115	323	72	169	148	183	36	22	93
14,	140	41	188	105	230	72	445	89	135	53	22	139
15,	115	41	528	115	176	72	340	224	120	59	19	2645
16,	105	41	261	125	154	72	289	245	120	48	19	313
17,	105	41	172	115	125	72	164	99	125	39	20	237
18,	88	41	144	101	135	57	284	771	115	34	18	213
19,	72	41	144	92	145	41	130	864	97	27	18	213
20,	72	41	144	920	115	41	89	530	88	45	18	213
21,	72	41	2466	1344	105	57	72	246	85	31	18	213
22,	72	41	446	527	97	72	72	176	77	34	18	213
23,	63	41	258	272	88	57	90	176	63	40	20	213
24	54	57	228	1318	88	41	107	2385	59	40	1173	213
25,	54	72	242	1563	97	41	80	710	56	27	304	213
26,	54	72	367	577	130	41	153	285	48	27	125	590
27,	63	72	582	323	216	57	135	196	45	27	84	1391
28,	63	72	288	236	373	72	89	164	45	22	69	272
29,	54	---------	195	194	620	108	222	142	60	27	76	2796
30,	54	---------	158	176	1029	52	457	119	77	27	68	3829
31,	48	---------	143	---------	323	---------	157	125	---------	22	---------	667

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1902.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis	Dis.	Dis.	Dis.	Dis.	Dis.
1,	224	223	2553	190	129	22	103	52	24	2375	136	328
2,	318	551	1414	148	84	22	61	32	23	464	125	246
3,	223	753	619	121	93	19	41	87	17	237	115	1083
4,	144	540	364	114	93	17	36	358	16	194	105	377
5,	144	474	225	114	81	17	31	42	16	1787	105	373
6,	144	381	176	145	70	18	28	72	15	2063	105	323
7,	144	176	229	248	57	20	28	80	15	379	105	213
8,	134	154	243	2009	59	22	26	44	16	257	100	188
9,	125	144	2597	1510	56	18	18	38	53	208	95	188
10,	125	144	2272	562	39	18	16	409	61	173	87	194
11,	115	134	1682	380	31	18	18	729	35	659	77	140
12	105	125	751	272	31	16	22	388	26	3497	72	206
13,	105	125	502	221	36	20	19	133	16	591	71	307
14,	96	125	621	200	31	18	15	86	15	337	67	499
15,	88	115	501	182	26	15	22	70	16	258	46	433
16,	88	105	309	154	26	25	24	55	16	218	43	3174
17,	88	105	1283	144	26	33	20	49	15	194	59	2718
18,	88	105	445	134	23	26	16	49	14	181	46	656
19,	88	105	235	125	21	20	16	39	14	169	42	506
20,	80	105	186	113	26	16	15	37	15	152	50	560
21,	619	329	179	99	31	308	12	40	15	137	50	2682
22,	3226	3043	175	93	31	157	13	34	15	125	51	2709
23,	352	1495	154	81	31	49	15	30	15	115	48	616
24	183	604	144	72	31	36	481	36	13	110	52	422
25,	139	853	124	72	68	36	758	41	42	105	91	345
26,	134	6063	115	73	70	175	168	36	1399	102	255	267
27,	601	3438	125	64	49	79	55	95	1249	107	282	213
28,	368	4041	153	60	55	80	31	100	379	1195	146	213
29,	188		448	95	48	312	45	33	440	320	104	294
30,	164		679	206	37	269	65	28	174	182	118	294
31,	154		450		24		71	26		150		200

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1903.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	183	188	950	326	110	25	68	73	97	25	63	31
2,	192	164	433	235	107	18	40	32	79	24	56	31
3,	3147	189	339	213	98	21	66	22	63	23	54	31
4,	637	2946	287	526	112	13	76	26	47	20	59	31
5,	409	917	264	402	115	17	50	87	50	20	68	34
6,	424	223	235	221	105	19	34	90	297	20	76	38
7,	340	72	227	333	99	20	31	93	90	20	68	41
8	207	72	393	1535	94	29	26	86	54	1061	52	41
9,	207	132	868	1011	87	37	19	37	48	6985	50	71
10,	207	167	541	536	64	32	15	36	44	2742	48	133
11,	435	319	506	348	48	108	19	34	41	1338	44	159
12,	435	1003	439	339	48	88	18	31	38	553	41	144
13,	185	427	505	326	46	69	15	34	28	362	41	1655
14,	144	371	267	2952	43	47	15	62	24	261	42	448
15,	107	410	235	2208	41	41	14	99	26	192	41	357
16,	88	657	200	1003	41	41	12	52	202	166	47	644
17,	88	607	179	472	36	36	11	36	240	188	63	546
18,	88	435	165	405	33	28	975	31	129	195	121	388
19,	80	339	153	330	36	26	737	26	78	158	79	273
20,	80	287	146	290	33	56	111	21	47	132	53	2704
21,	2098	242	167	260	31	140	60	19	41	122	47	1171
22,	457	213	1005	235	31	94	47	18	36	109	41	203
23,	154	213	2128	213	31	68	322	16	32	105	40	154
24.	120	213	839	193	28	121	90	16	32	92	40	144
25,	105	213	442	179	26	90	45	18	29	85	41	144
26,	97	213	320	167	24	47	34	16	26	81	41	154
27,	80	352	264	154	24	36	27	15	27	77	41	176
28,	1098	4984	225	129	23	31	22	114	80	73	40	188
29,	446	----------	198	110	23	164	22	454	52	69	30	165
30,	448	----------	397	105	33	173	38	184	29	68	27	138
31,	229	----------	982	----------	36	----------	366	115	----------	68	----------	138

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1904.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	119	144	768	1549	83	153	26	55	53	47	93	54
2,	92	135	463	632	72	124	24	79	50	42	85	54
3,	88	125	369	288	63	113	21	65	52	38	81	54
4,	88	125	321	195	51	84	18	44	47	37	78	54
5,	88	125	243	161	47	334	17	34	41	35	75	54
6,	88	518	80	148	43	414	22	396	38	39	69	54
7,	88	2274	3137	179	40	2502	118	91	34	33	68	51
8,	88	864	1637	194	38	360	1314	46	29	27	71	48
9,	92	125	277	513	38	189	149	36	28	29	72	48
10,	105	125	135	564	39	147	17	1143	31	30	75	48
11,	105	125	103	235	38	135	130	1546	31	33	169	48
12,	105	115	91	188	35	107	80	256	31	2577	125	45
13,	344	89	73	164	34	80	82	243	31	361	408	41
14,	1060	72	71	137	33	72	73	1012	132	167	1558	41
15,	955	72	75	118	40	68	43	268	3911	120	540	41
16,	532	63	194	104	42	57	39	135	323	101	492	41
17,	189	54	232	93	37	48	37	102	176	92	419	41
18,	154	54	755	86	36	45	32	87	135	85	238	41
19,	125	54	995	85	33	42	31	72	113	77	201	41
20,	105	63	383	80	33	39	30	1596	94	72	188	41
21,	105	118	205	75	33	41	29	482	84	3560	176	41
22,	1592	4007	385	71	29	94	27	224	76	502	152	36
23,	4696	304	473	67	31	80	23	233	68	262	138	31
24,	1336	182	253	61	28	33	20	162	59	198	125	31
25,	380	134	208	63	19	30	22	120	54	174	111	52
26,	470	105	329	72	20	26	235	97	55	155	105	157
27,	450	89	328	103	18	21	203	86	55	136	83	246
28,	314	237	181	131	15	22	48	79	51	115	59	1090
29,	213	613	143	117	15	27	48	73	46	105	54	565
30,	189	----------	125	98	19	28	37	64	47	101	54	200
31,	154	----------	380	----------	246	----------	30	58	----------	97	----------	153

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1905.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	368	72	415	345	82	27	11	7	33	15	33	140
2,	31	72	425	318	75	29	20	6	29	16	30	105
3,	31	72	394	138	72	28	30	6	358	22	30	661
4,	31	72	375	177	60	23	26	6	200	28	30	403
5,	122	80	352	586	50	24	16	7	188	24	28	164
6,	276	142	339	1084	52	24	12	10	77	20	29	115
7,	4064	210	353	344	50	23	12	17	46	18	28	100
8,	504	229	566	224	49	27	10	19	37	14	28	95
9,	233	233	1813	200	44	26	10	26	33	15	27	98
10,	153	230	3036	188	41	23	10	15	55	15	23	103
11,	165	265	1706	245	42	21	10	15	31	42	22	104
12,	538	248	1045	369	42	22	10	14	383	72	21	97
13,	510	324	494	266	42	26	12	311	147	60	21	85
14,	216	376	768	195	40	25	14	121	67	33	23	62
15,	200	357	819	175	43	23	12	317	44	20	22	58
16,	176	340	833	160	59	18	10	658	34	15	21	68
17,	154	340	1091	146	64	15	9	115	30	15	21	64
18,	124	307	1176	130	52	14	11	49	35	15	22	64
19,	105	272	1432	117	42	13	10	33	68	23	19	52
20,	96	268	1194	110	37	14	7	24	56	724	19	46
21,	88	253	2533	122	32	15	6	19	60	116	21	1761
22,	88	256	1075	131	31	19	6	20	54	96	19	478
23,	80	271	601	108	32	28	8	15	34	66	18	294
24,	72	271	520	92	26	31	11	13	28	55	16	245
25,	72	271	1435	88	26	24	11	43	24	52	17	176
26,	72	342	509	86	26	19	9	263	22	62	20	134
27,	72	414	342	138	21	19	8	75	20	55	19	105
28,	72	404	286	145	21	15	7	36	19	41	20	105
29,	72	----------	249	97	22	12	6	26	20	41	1165	476
30,	72	----------	230	90	22	10	6	26	17	37	544	850
31,	72	----------	213	----------	24	----------	7	31	----------	34	----------	166

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1906.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	126	134	234	362	84	81	217	66	59	18	414	71
2,	107	112	148	242	82	68	210	268	46	18	376	62
3,	126	135	2048	198	82	59	1048	1502	44	22	134	62
4,	1539	150	3050	176	80	54	2786	318	44	24	114	86
5,	497	106	540	166	210	48	357	128	35	28	99	87
6,	268	88	328	162	236	41	250	134	38	2412	94	108
7,	200	88	272	152	133	44	148	114	42	260	82	116
8	171	80	279	136	114	44	127	104	36	128	75	91
9,	154	157	268	828	96	38	124	105	31	98	74	88
10,	153	228	218	2079	96	36	124	96	28	74	72	97
11,	151	188	178	468	88	39	100	96	26	68	86	369
12.	362	154	163	316	76	34	80	100	22	66	139	304
13,	448	396	154	245	68	26	76	84	596	54	106	188
14,	319	678	123	210	61	26	69	72	101	42	71	72
15,	362	1092	123	2065	52	24	63	63	58	38	71	72
16,	648	188	306	778	48	761	59	57	31	38	108	88
17,	424	115	116	320	52	1112	390	50	22	34	146	680
18,	256	125	144	250	44	2257	166	47	110	31	400	483
19,	242	115	142	218	34	2736	73	43	104	31	620	200
20,	200	124	164	195	32	524	56	43	34	42	254	538
21,	138	370	198	172	28	236	156	47	121	140	190	792
22,	88	983	176	152	28	303	154	210	46	955	174	550
23,	138	264	134	143	31	605	61	80	60	550	148	288
24	242	180	115	134	31	895	66	125	60	219	122	144
25,	184	342	115	125	31	248	54	445	34	163	149	144
26,	144	635	214	115	31	172	46	168	29	210	142	144
27,	129	198	2161	100	42	144	43	132	28	196	94	178
28,	306	144	1226	92	574	123	41	126	25	126	84	213
29,	290	----------	740	84	1064	106	148	96	22	111	78	213
30,	160	----------	362	84	209	97	408	85	18	96	74	178
31.	142	----------	552	----------	102	----------	116	74	----------	88	----------	1755

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1907.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	1254	278	162	134	117	80	192	26	14	276	221	224
2,	411	217	208	130	108	1312	98	28	14	190	608	208
3,	330	248	683	115	100	443	89	26	17	161	1534	184
4,	653	202	884	108	496	227	80	20	17	198	366	172
5,	468	157	590	99	233	198	60	20	18	191	260	168
6,	272	149	473	92	162	184	47	21	31	132	548	162
7,	242	159	394	90	159	140	44	26	36	118	1107	162
8,	254	164	434	212	144	122	46	26	24	767	480	164
9,	830	236	689	309	161	111	52	128	19	418	343	167
10,	276	290	1191	350	176	96	50	104	20	186	524	1513
11,	203	285	488	208	224	86	48	47	16	160	526	984
12,	1626	269	242	160	158	80	50	32	19	150	290	291
13,	816	236	1161	147	124	79	44	24	20	138	242	228
14,	1284	222	4034	144	113	88	36	21	17	114	210	497
15,	669	213	2714	124	100	92	38	18	15	100	184	1322
16,	494	208	1234	113	877	82	36	17	14	94	170	671
17,	303	203	960	106	804	74	28	18	14	90	159	436
18,	303	238	888	96	306	71	62	18	14	85	196	306
19,	303	237	680	104	367	72	127	18	20	77	1005	250
20,	303	206	1603	114	360	63	136	17	24	72	328	222
21,	330	188	571	100	196	63	64	16	19	72	300	200
22,	357	165	436	94	154	63	39	17	16	72	382	176
23,	357	165	377	132	138	50	31	16	924	68	259	3058
24,	348	159	313	1258	129	44	31	44	1674	64	2297	1016
25,	340	168	250	508	116	44	26	138	519	58	1681	428
26,	331	170	206	188	111	92	22	62	159	50	561	332
27,	322	167	194	194	124	200	21	32	96	65	306	287
28,	322	167	182	158	119	82	20	26	353	2258	338	256
29,	312	----------	166	138	100	72	22	23	4634	2368	289	228
30,	304	----------	151	127	82	538	25	18	527	449	246	352
31,	294	----------	134	----------	80	----------	26	15	----------	282	----------	392

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1908.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	304	1506	175	238	285	207	28	19	63	40	130	42
2,	249	499	145	293	121	144	42	18	59	30	104	40
3,	217	256	152	255	86	120	73	17	51	30	86	41
4,	196	228	158	157	72	110	88	19	46	26	80	41
5,	196	213	200	144	72	92	76	21	43	21	68	41
6,	183	213	150	145	68	88	45	20	56	18	55	41
7,	323	213	738	135	1825	84	28	180	62	16	52	1173
8	528	200	455	184	1138	76	29	210	44	16	50	405
9,	293	188	1284	260	244	72	25	55	38	18	46	178
10,	208	188	376	164	291	72	21	29	46	18	46	141
11,	179	176	287	154	222	72	22	948	22	20	44	146
12.	778	164	271	146	171	68	22	395	22	22	42	236
13,	1222	369	274	117	144	61	22	114	28	21	42	210
14,	501	2315	286	101	138	56	24	68	29	18	41	140
15,	346	2719	323	112	378	121	24	48	27	16	41	124
16,	292	594	304	136	502	584	21	36	26	16	41	106
17,	248	270	228	124	239	126	19	30	27	13	42	106
18,	206	200	564	105	1135	84	18	27	22	13	54	192
19,	190	874	2086	119	245	81	16	23	21	14	98	252
20,	178	1256	339	133	272	32	16	20	18	14	128	207
21,	176	383	330	110	280	54	20	20	17	14	104	168
22,	186	270	272	84	373	54	22	19	15	13	76	134
23,	184	188	518	83	301	47	30	17	16	13	70	110
24	162	175	481	78	236	42	484	19	16	14	67	105
25,	172	175	268	72	182	42	130	22	17	16	60	115
26,	188	2618	202	62	154	41	489	2660	18	704	55	120
27,	303	565	183	68	138	34	120	452	16	497	62	110
28,	268	264	192	71	119	26	38	208	35	613	60	105
29,	222	164	159	62	105	28	36	120	249	622	46	104
30,	177		152	107	520	31	29	92	96	546	44	123
31,	152		220		812		21	75		191		186

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1909.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	186	72	272	169	817	53	23	14	11	11	10	18
2,	134	72	597	141	673	74	18	13	14	11	12	18
3,	115	72	442	140	310	84	14	12	12	11	14	18
4,	105	98	334	136	235	78	14	13	10	10	14	12
5,	1179	140	331	126	203	82	18	13	9	10	13	12
6,	1752	102	286	119	182	76	19	12	9	10	12	13
7,	334	88	286	110	147	62	18	12	8	10	11	18
8,	184	118	523	95	206	50	16	12	8	10	11	16
9,	171	104	706	89	172	50	16	12	8	9	12	15
10,	164	1022	662	82	200	58	18	10	12	9	12	15
11,	164	1599	445	75	202	63	17	11	14	10	10	15
12,	164	233	254	78	142	57	14	10	12	8	10	14
13,	134	180	325	86	117	61	13	10	12	9	13	850
14,	116	200	366	651	102	147	14	10	11	11	12	1718
15,	146	308	270	1224	96	498	15	10	10	10	12	233
16,	164	901	209	350	90	105	17	98	10	9	12	112
17,	234	774	183	216	82	80	16	120	10	10	13	81
18,	287	300	167	178	78	132	15	48	10	10	13	81
19,	242	422	170	161	74	105	15	24	10	10	11	81
20,	213	1489	172	566	67	58	15	18	10	10	12	68
21,	194	380	154	685	84	45	15	16	9	12	10	43
22,	160	280	134	998	84	40	15	14	10	11	10	32
23,	284	1112	128	542	241	37	28	13	9	11	12	32
24	500	3759	124	556	110	34	41	13	11	12	29	32
25,	516	1425	674	279	83	32	34	12	17	10	64	34
26,	340	284	455	227	65	30	20	12	16	9	78	58
27,	204	200	244	145	82	31	24	12	14	9	55	76
28,	188	334	268	183	145	32	26	10	12	9	32	76
29,	156	----------	259	200	166	30	16	10	12	10	22	76
30,	92	----------	212	1398	76	26	14	9	11	9	18	76
31,	72	----------	212	----------	59	----------	14	9	----------	9	----------	81

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1910.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	93	130	3539	44	415	41	28	8	50	7	8	42
2,	105	130	883	44	346	34	27	7	168	8	10	38
3,	105	184	652	44	156	35	38	8	70	8	88	36
4,	105	213	358	54	151	38	36	25	55	7	1070	40
5,	105	180	295	64	134	36	28	50	48	7	628	41
6,	158	126	287	56	119	42	26	56	38	7	185	36
7,	1040	107	420	46	106	43	14	18	58	8	106	34
8	896	98	300	40	110	35	13	32	55	8	80	31
9.	684	88	188	36	119	35	16	170	29	8	69	31
10,	455	150	159	34	106	326	13	612	21	8	60	31
11,	322	213	144	32	91	218	11	824	19	9	54	36
12.	214	256	134	26	86	1464	12	88	19	9	48	41
13,	215	290	126	29	78	730	13	40	16	9	40	44
14,	198	222	121	31	68	418	12	28	14	9	36	44
15,	198	153	108	31	59	144	12	24	14	8	36	41
16,	188	375	98	28	52	134	13	21	11	8	40	41
17,	323	1215	87	40	50	144	13	18	11	8	37	41
18,	538	499	84	938	56	124	13	19	11	8	34	41
19.	2520	272	88	488	58	104	18	19	10	23	30	64
20,	2706	280	83	394	58	90	17	20	10	244	34	86
21,	3296	2032	83	188	68	72	13	16	10	80	28	85
22,	1736	2149	82	130	74	58	14	11	10	36	26	88
23,	474	1392	74	109	56	50	12	16	9	35	26	84
24	334	720	72	1901	48	42	12	13	8	30	24	740
25,	268	200	69	1870	88	36	12	14	8	20	24	705
26,	228	166	61	2012	302	32	11	14	8	12	25	286
27.	200	300	53	490	109	34	10	14	8	14	20	194
28,	192	1674	50	307	58	36	8	12	8	16	22	164
29,	175	----------	48	264	44	34	7	12	8	11	38	134
30,	175	----------	45	358	42	31	9	12	7	8	48	159
31,	164	----------	44	----------	43	----------	9	14	----------	8	----------	258

DAILY DISCHARGE, IN SECOND-FEET, OF NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY, PA.

1911.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	461	174	194	104	150	92	14	12	1470	122	121	213
2,	996	120	158	95	422	64	12	12	350	1494	100	190
3,	2153	135	130	88	140	38	14	12	201	332	90	183
4,	1731	1157	117	114	100	34	14	42	152	173	94	176
5,	436	462	117	517	92	34	12	48	116	132	92	166
6,	436	182	158	602	84	70	12	20	101	113	372	163
7,	264	314	173	239	75	86	11	15	94	132	1028	160
8	188	246	184	166	72	52	10	14	84	132	256	158
9,	168	157	132	238	68	34	11	12	76	106	161	156
10,	166	134	130	364	64	30	10	11	76	91	140	141
11,	191	144	140	186	59	33	8	12	297	109	182	128
12.	166	234	164	146	52	43	8	13	253	122	174	130
13,	295	303	165	126	49	61	12	13	104	102	352	126
14,	314	272	167	142	45	68	11	12	77	80	174	116
15,	882	201	1662	230	40	48	9	248	146	74	694	450
16,	314	186	602	176	42	31	10	286	212	81	563	1018
17,	135	140	285	136	42	29	16	58	166	80	242	634
18,	135	253	280	112	35	30	93	21	112	617	2981	320
19,	135	280	238	126	34	30	42	15	87	432	566	236
20,	134	186	254	1587	32	25	22	16	80	342	825	182
21,	124	182	225	536	31	20	23	15	64	873	298	166
22,	115	192	170	392	29	20	17	15	47	603	207	242
23,	106	152	151	364	28	22	12	11	51	987	176	970
24.	96	129	144	280	25	22	14	9	51	420	1087	362
25,	96	246	142	215	23	19	16	71	49	276	666	240
26,	96	471	130	169	26	19	16	92	49	225	328	224
27.	221	438	163	142	26	22	16	88	43	193	248	780
28,	438	258	345	129	20	22	14	107	38	168	313	308
29.	291	----------	168	120	20	24	12	70	96	151	524	348
30,	572	----------	154	111	17	20	12	111	181	140	276	293
31.	239	----------	132	----------	59	----------	12	5334	----------	130	----------	268

ESTIMATED MONTHLY DISCHARGE, NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY.

(Drainage area 139 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1884.					
June,	2271	5	139	.99	1.105
July,	905	13	62	.45	0.519
August,	462	10	61	.44	0.507
September,	15	3	6	.04	0.045
October,	12	3	5	.04	0.046
November,	441	3	39	.28	0.312
December,	2354	20	534	3.83	4.416
1885.					
January,	1886	120	382	2.74	3.16
February,	4484	33	589	4.23	4.40
March,	1053	42	203	1.46	1.68
April,	1761	42	171	1.23	1.37
May,	474	20	65	0.47	.54
June,	22	4	9	0.06	.07
July,	41	2	6	0.04	.05
August,	2377	3	112	0.80	.92
September,	9	1	4	0.03	.03
October,	103	1	21	0.15	.17
November,	746	23	185	1.33	1.48
December,	1803	63	200	1.44	1.66
The year,	4484	1	162	1.16	15.53
1886.					
January,	3735	83	609	4.37	5.04
February,	5767	122	843	6.05	6.30
March,	1870	66	266	1.91	2.20
April,	4734	65	431	3.09	3.45
May,	2346	41	244	1.75	2.02
June,	732	29	110	.79	.88
July,	598	19	92	.66	.76
August,	46	4	17	.12	.14
September,	10	2	5	.04	.04
October,	38	2	6	.04	.05
November,	770	7	67	.48	.54
December,	2228	46	272	.20	.23
The year,	5767	2	247	1.63	21.65
1887.					
January,	2891	130	490	3.52	4.06
February,	1703	156	507	3.64	3.79
March,	2185	109	380	2.73	3.15
April,	663	69	176	1.26	1.41
May,	310	25	82	.59	.68
June,	3159	23	199	1.43	1.60
July,	1570	30	226	1.62	1.87
August,	379	30	93	.67	.77
September,	492	14	51	.37	.41
October,	398	13	42	.30	.35
November,	61	18	32	.23	.26
December,	1648	23	334	2.40	2.77
The year,	3159	13	218	1.56	21.12

ESTIMATED MONTHLY DISCHARGE, NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY.

(Drainage area 139 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1888.					
January,	4890	151	558	4.01	4.62
February,	3619	191	709	5.09	5.49
March,	3126	77	592	4.25	4.90
April,	2227	68	350	2.51	2.80
May,	130	36	64	.46	.53
June,	65	8	25	.18	.20
July,	125	8	18	.13	.15
August,	1500	6	80	.57	.66
September,	3099	9	327	2.35	2.62
October,	688	47	129	.93	1.07
November,	1821	84	291	2.09	2.33
December,	3759	80	380	2.73	3.15
The year,	4890	6	294	2.11	28.52
1889.					
January,	1130	116	356	2.56	2.95
February,	1116	87	208	1.49	1.55
March,	3197	89	348	2.50	2.89
April,	2258	48	257	1.84	2.06
May,	822	41	214	1.54	1.78
June,	562	40	145	1.04	1.16
July,	5531	94	658	4.72	5.44
August,	2046	49	410	2.94	3.39
September,	2947	38	443	3.18	3.55
October,	3749	87	304	2.18	2.52
November,	3528	180	788	5.62	6.27
December,	443	109	228	1.64	1.89
The year,	5531	38	363	2.60	35.44
1890.					
January,	1391	80	201	1.45	1.672
February,	2848	111	397	2.85	2.968
March,	2990	132	620	4.45	5.130
April,	666	61	222	1.59	1.774
May,	1986	47	181	1.30	1.499
June,	1150	27	133	.96	1.071
July,	566	15	73	.52	0.600
August,	670	10	63	.45	0.519
September,	180	18	39	.28	0.312
October,	2400	28	262	1.88	2.167
November,	231	52	98	.71	.792
December,	848	56	165	1.19	1.372
The year,	2990	10	204	1.47	19.876
1891.					
January,	3257	128	703	5.05	5.822
February,	1585	193	600	4.31	4.488
March,	3046	182	525	3.77	4.346
April,	931	55	182	1.31	1.462
May,	83	26	39	.28	0.322
June,	126	15	31	.22	0.245
July,	214	14	40	.29	0.334
August,	3276	17	235	1.69	1.948
September,	1939	22	157	1.13	1.261
October,	340	12	65	.47	0.542
November,	261	29	73	.52	0.580
December,	1622	50	366	2.63	3.032
The year,	3276	12	251	1.81	24.358

ESTIMATED MONTHLY DISCHARGE, NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY.

(Drainage area 139 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1892.					
January,	3584	144	627	4.50	5.188
February,	191	77	125	.90	0.971
March,	2582	114	431	3.09	3.562
April,	193	87	126	.90	1.004
May,	492	50	194	1.39	1.603
June,	140	26	71	.50	0.558
July,	519	14	66	.47	0.542
August,	69	10	24	.17	0.196
September,	96	3	13	.09	0.104
October,	8	4	5	.04	0.046
November,	2346	5	220	1.58	1.763
December,	559	47	127	.91	1.049
The year,	3584	3	169	1.21	16.582
1893.					
January,	1678	90	242	1.74	2.006
February,	2727	179	661	4.76	4.957
March,	2436	133	565	4.06	4.681
April,	2448	85	363	2.61	2.912
May,	3154	63	358	2.57	2.963
June,	284	24	56	.41	0.457
July,	25	8	16	.12	0,138
August,	1692	5	132	.95	1.095
September,	749	27	72	.52	0.580
October,	481	18	70	.50	0.576
November,	759	59	322	2.31	2.577
December,	1938	102	316	2.27	2.617
The year,	3154	5	264	1.90	25.559
1894.					
January,	188	67	95	.68	0.784
February,	1090	6	37	.27	0.281
March,	934	131	323	2.32	2.675
April,	1521	97	250	1.79	1.997
May,	9012	36	895	6.42	7.402
June,	368	45	143	1.04	1.160
July,	212	19	52	.37	0.427
August,	400	7	41	.29	0.334
September,	3197	5	284	2.04	2.276
October,	1715	34	180	1.29	1.487
November,	1371	96	296	2.13	2.376
December,	1824	110	279	2.00	2.306
The year,	9012	5	240	1.72	23.487
1895.					
January,	2289	98	412	2.96	3.413
February,	903	98	237	1.70	1.770
March,	1635	149	515	3.70	4.266
April,	3234	101	417	2.99	3,336
May,	225	39	84	.60	0.692
June,	202	25	68	.48	0.536
July,	664	18	106	.76	0.876
August,	1225	9	81	.58	0.669
September,	11	4	7	.05	0.056
October,	34	4	10	.07	0.081
November,	34	7	14	.10	0.112
December,	573	6	49	.35	0,404
The year,	3234	4	167	1.19	16.211

ESTIMATED MONTHLY DISCHARGE, NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY.

(Drainage area 139 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1896.					
January,	565	14	71	.51	0.588
February,	8707	39	611	4.39	4.735
March,	5408	57	528	3.79	4.369
April,	286	81	133	.96	1.071
May,	135	23	46	.33	0.380
June,	236	17	50	.36	0.402
July,	1373	13	126	.90	1.038
August,	71	10	25	.18	0.208
September,	765	8	120	.86	0.960
October,	1480	19	112	.80	0.922
November,	1305	28	190	1.36	1.517
December,	306	30	106	.76	0.876
The year,	8707	8	176	1.27	17.066
1897.					
January,	1856	31	156	1.12	1.291
February,	2973	41	339	2.43	2.530
March,	700	88	210	1.50	1.729
April,	1750	65	191	1.37	1.529
May,	2215	74	331	2.38	2.744
June,	4677	48	307	2.20	2.455
July,	3083	27	358	2.57	2.963
August,	1075	49	130	.93	1.072
September,	43	19	27	.20	0.223
October,	85	10	20	.14	0.161
November,	1354	36	147	1.05	1.171
December,	2696	91	395	2.83	3.263
The year,	4677	10	218	1.56	21.131
1898.					
January,	2985	88	374	2.68	3.090
February,	5076	105	469	3.37	3.509
March,	1232	77	199	1.43	1.649
April,	782	77	211	1.52	1.696
May,	3153	129	459	3.30	3.805
June,	117	28	55	.40	0.446
July,	66	14	23	.17	0.196
August,	1615	22	128	.92	1.061
September,	24	6	12	.09	0.100
October,	176	6	27	.19	0.219
November,	3529	17	376	2.70	3.012
December,	3059	85	418	3.01	3.470
The year,	5076	6	229	1.65	22.253
1899.					
January,	2105	71	411	2.95	3.401
February,	3950	72	551	3.95	4.113
March,	3687	242	895	6.42	7.402
April,	1047	73	208	1.49	1.662
May,	89	22	49	.35	0.404
June,	31	11	16	.12	0.134
July,	325	6	23	.16	0.184
August,	2577	11	174	1.24	1.430
September,	578	13	80	.58	0.647
October,	123	17	34	.24	0.277
November,	1257	41	130	.93	1.038
December,	792	31	89	.64	0.738
The year,	3950	6	222	1.59	21.430

ESTIMATED MONTHLY DISCHARGE, NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY.

(Drainage area 139 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1900.					
January,	2588	48	327	2.35	2.71
February,	3163	142	696	5.00	5.21
March,	2675	101	378	2.71	3.13
April,	860	64	153	1.10	1.28
May,	3990	26	279	2.00	2.31
June,	1221	19	102	.73	.81
July,	250	10	47	.34	.39
August,	88	9	23	.17	.20
September,	58	5	11	.08	.09
October,	118	8	18	.13	.15
November,	840	8	50	.36	.40
December,	711	15	91	.65	.75
The year,	3990	5	181	1.30	17.38
1901.					
January,	1965	31	151	1.09	1.257
February,	72	41	46	.33	0.344
March,	4624	51	421	3.03	3.493
April,	1774	92	434	3.12	3.481
May,	1029	88	253	1.82	2.098
June,	509	41	111	.80	0.893
July,	1320	31	181	1.30	1.499
August,	2385	63	331	2.38	2.744
September,	1676	45	196	1.41	1.573
October,	73	22	39	.28	0.323
November,	1173	18	78	.56	0.625
December,	3829	48	549	3.95	4.554
The year,	4624	18	232	1.67	22.884
1902.					
January,	3226	80	284	2.04	2.352
February,	6063	105	877	6.31	6.571
March,	2597	115	640	4.60	5.303
April,	2009	60	267	1.92	2.142
May,	129	21	49	.35	0.404
June,	312	15	62	.45	0.502
July,	758	12	74	.53	0.611
August,	729	26	108	.78	0.899
September,	1399	13	139	1.00	1.116
October,	3497	102	550	3.96	4.565
November,	282	42	95	.68	0.759
December,	3174	140	676	4.86	5.603
The year,	6063	12	318	2.29	30.827
1903.					
January,	3147	80	439	3.16	3.643
February,	4984	72	592	4.25	4.426
March,	2128	146	461	3.31	3.816
April,	2952	105	525	3.77	4.206
May,	115	23	55	.39	0.450
June,	173	13	58	.42	0.469
July,	975	11	110	.79	0.911
August,	454	15	64	.46	0.530
September,	297	24	71	.51	0.569
October,	6985	20	498	3.58	4.127
November,	121	27	52	.37	0.413
December,	2704	31	341	2.44	2.813
The year,	6985	11	272	1.96	26.373

ESTIMATED MONTHLY DISCHARGE, NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY.

(Drainage area 139 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1904.					
January,	4696	88	468	3.37	3.88
February,	4007	54	383	2.76	2.98
March,	3137	71	433	3.12	3.60
April,	1549	61	219	1.58	1.76
May,	246	15	44	.32	.37
June,	2502	21	184	1.32	1.47
July,	1314	17	98	.70	.81
August,	1596	34	290	2.09	2.41
September,	3911	28	199	1.43	1.60
October,	3560	27	305	2.19	2.52
November,	1558	54	205	1.47	1.64
December,	1090	31	114	.82	.94
The year,	4696	15	245	1.76	23.98
1905.					
January,	4064	31	288	2.07	2.39
February,	414	72	250	1.80	1.87
March,	3036	213	859	6.18	7.12
April,	1084	86	221	1.59	1.77
May,	82	21	43	.31	.36
June,	31	10	22	.16	.17
July,	30	6	12	.08	.10
August,	658	6	76	.55	.63
September,	383	17	76	.54	.61
October,	724	14	60	.43	.50
November,	1165	16	79	.57	.63
December,	1761	46	225	1.62	1.87
The year,	4064	6	184	1.32	18.01
1906.					
January,	1540	88	281	2.02	2.33
February,	1090	80	270	1.94	2.02
March,	3050	115	484	3.48	4.01
April,	2080	84	359	2.58	2.88
May,	1060	28	127	.91	1.05
June,	2740	24	366	2.63	2.93
July,	2790	41	252	1.81	2.09
August,	1500	43	164	1.18	1.36
September,	596	18	651	4.68	5.22
October,	2410	18	206	1.48	1.71
November,	620	71	160	1.15	1.28
December,	1760	62	273	1.96	2.26
The year,	3050	18	299	2.15	29.14
1907.					
January,	1630	203	481	3.46	3.99
February,	290	149	206	1.48	1.54
March,	4030	134	732	5.27	6.08
April,	1260	90	195	1.40	1.56
May,	877	80	214	1.54	1.78
June,	1310	44	165	1.19	1.33
July,	192	20	54	.39	.45
August,	138	15	34	.25	.28
September,	4630	14	310	2.23	2.49
October,	2370	50	307	2.21	2.55
November,	2300	159	532	3.83	4.27
December,	3060	162	486	3.50	4.04
The year,	4630	14	310	2.23	30.36

ESTIMATED MONTHLY DISCHARGE, NESHAMINY CREEK, BELOW THE FORKS, BUCKS COUNTY.

(Drainage area 139 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1908.					
January,	1220	152	291	2.09	2.41
February,	2720	164	601	4.32	4.66
March,	2090	145	380	2.73	3.15
April,	293	62	134	.96	1.08
May,	1820	68	351	2.53	2.92
June,	584	26	93	.67	.75
July,	489	16	67	.48	.56
August,	2660	17	194	1.40	1.61
September,	249	15	42	.30	.33
October,	704	13	117	.84	.97
November,	130	41	64	.46	.52
December,	1170	40	169	1.22	1.41
The year,	2720	13	209	1.50	20.37
1909.					
January,	1750	72	287	2.06	2.38
February,	3760	72	574	4.13	4.30
March,	706	124	318	2.29	2.64
April,	1400	75	333	2.40	2.68
May,	817	59	174	1.25	1.44
June,	498	26	77	.55	.62
July,	41	13	18	.13	.15
August,	120	9	20	.14	.16
September,	17	8	11	.08	.09
October,	12	8	10	.07	.08
November,	78	10	19	.14	.15
December,	1710	12	130	.94	1.08
The year,	3760	8	164	1.18	15.77
1910.					
January,	3296	93	594	4.27	4.923
February,	2149	88	493	3.55	3.697
March,	3539	44	282	2.03	2.340
April,	2012	26	338	2.43	2.711
May,	415	42	108	.78	.899
June,	1464	31	155	1.12	1.250
July,	38	7	16	.12	.138
August,	824	7	72	.52	.600
September,	168	7	27	.19	.212
October,	244	7	22	.16	.184
November,	1070	8	99	.71	.792
December,	740	31	121	.87	1.003
The year,	3539	7	194	1.40	18.749
1911.					
January,	2153	96	374	2.69	3.101
February,	1157	120	262	1.88	1.958
March,	1662	117	236	1.70	1.960
April,	1537	88	263	1.89	2.109
May,	422	17	65	.47	.542
June,	92	19	38	.27	.301
July,	93	8	17	.12	.138
August,	5334	9	220	1.58	1.822
September,	1470	38	164	1.18	1.317
October,	1494	74	291	2.09	2.410
November,	2981	90	426	3.06	3.414
December,	1018	116	298	2.14	2.467
The year,	5334	8	221	1.59	21.539

DELAWARE BASIN—STATION NO. 18.

PERKIOMEN CREEK AT FREDERICK (SPRING MOUNT), PA.

Perkiomen creek rises in the western part of Bucks County, Pa., flows southward, and discharges into the Schuylkill about 7 miles above Norristown and 18 miles above Philadelphia. Its drainage area comprises about 345 square miles. The area is mostly in farm land under a high state of cultivation, the original forest growth having been almost entirely cut away. The stream is subject to very sudden freshets, and during heavy rains large quantities of surface soil are eroded. The fall of the creek from its source to the gaging station is about 800 feet in 24 miles. The average yearly rainfall over this watershed is from 40 to 50 inches.

Continuous records of discharge have been obtained since 1884 by the Philadelphia Bureau of Water, Department of Public Works, under the personal supervision of John E. Codman, by whom the following records have been furnished. The gaging station is located about 12 miles above the mouth of the creek, above the East Branch, and the discharge represents about one-third of the total area drained by the stream.

An automatic gage is used to obtain a continuous record of gage height. The lower part of the rating curve has been developed from the computed discharge over a weir, and the discharge at high stages is determined from a curve developed from current meter measurements. The rating curve is well defined.

The following data have been furnished by the United States Geological Survey, and the Philadelphia Bureau of Water.

DAILY DISCHARGE IN SECOND-FEET OF PERKIOMEN CREEK, AT FREDERICK (SPRING MOUNT), MONTGOMERY COUNTY, PA.

1884.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	---------	100	44	155	93
2,	---------	79	58	59	64
3,	---------	71	58	57	64
4,	---------	63	61	71	79
5,	---------	60	58	342	78
6,	---------	53	46	140	828
7,	---------	53	48	91	3425
8,	---------	50	41	70	380
9,	---------	46	41	50	230
10,	---------	44	41	48	179
11.	---------	38	37	47	187
12,	---------	39	40	62	981
13,	---------	38	36	69	600
14,	---------	33	33	75	256
15,	---------	35	25	75	2409
16,	---------	37	25	73	516
17,	---------	37	25	52	292
18,	---------	37	20	48	236
19,	---------	38	16	48	186
20,	60	37	16	57	139
21,	58	37	21	76	106
22,	56	47	23	96	465
23,	56	47	48	93	449
24.	45	41	51	768	820
25,	47	37	43	223	247
26,	50	32	40	142	182
27,	54	23	41	121	171
28,	58	23	45	121	199
29,	89	29	87	262	241
30,	110	40	168	142	367
31,	130	---------	238	---------	1239

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT) MONTGOMERY COUNTY, PA.

1885.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	1639	113	123	1582	124	85	35	28	28	23	86	175
2,	373	109	204	710	126	79	25	19	36	23	706	194
3,	229	109	242	495	129	58	25	1582	24	21	306	200
4,	174	111	222	3192	115	47	17	1673	8	26	155	184
5,	173	112	521	627	102	44	9	174	9	34	113	166
6,	2600	104	703	454	93	44	24	89	16	35	89	153
7,	981	100	568	319	244	28	17	65	25	41	78	124
8,	435	100	238	315	805	41	29	277	23	31	613	115
9,	359	98	197	273	358	65	26	135	30	31	862	250
10,	291	2107	189	255	227	47	25	73	31	26	267	970
11,	232	210	164	237	192	46	32	60	27	8	162	340
12,	251	252	151	238	161	35	31	51	24	15	132	181
13	615	217	151	209	133	36	30	43	20	22	113	1250
14,	313	184	211	189	128	31	22	76	24	70	101	2546
15,	290	193	223	157	132	33	33	86	28	67	83	583
16,	587	1795	418	143	120	41	35	61	32	45	81	308
17,	1372	832	322	143	95	34	27	50	27	42	86	239
18,	283	857	204	133	87	28	23	37	19	26	73	217
19,	271	274	176	112	90	28	12	34	25	24	60	204
20,	228	234	136	117	77	28	21	41	15	22	65	159
21,	201	190	136	115	69	23	24	34	20	118	57	140
22,	181	149	93	98	80	32	23	32	16	243	46	143
23,	163	147	67	92	92	22	15	29	14	95	349	133
24,	144	130	81	94	95	28	14	39	21	54	685	139
25,	141	115	185	100	87	29	14	41	19	37	440	113
26	153	121	652	150	94	25	10	42	19	38	382	79
27,	151	111	911	201	90	21	15	40	10	46	348	67
28,	155	101	992	171	74	16	17	46	19	39	261	85
29,	145	----------	538	139	62	18	26	35	17	39	206	100
30,	120	----------	250	124	58	30	29	26	24	228	192	87
31,	113	----------	985	----------	60	----------	17	28	----------	175	----------	292

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT) MONTGOMERY COUNTY, PA.

1886.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	452	280	237	1548	96	101	83	95	38	30	52	141
2,	218	235	214	482	79	88	73	86	41	29	67	114
3,	167	236	193	335	89	111	67	74	35	22	33	73
4,	950	304	174	303	87	137	71	57	28	27	30	62
5,	3044	214	177	449	84	104	59	50	22	22	51	55
6,	516	172	163	4021	83	76	52	47	28	17	36	44
7,	300	155	143	1626	90	79	47	57	29	23	53	65
8,	222	159	163	640	3094	78	50	61	34	20	55	59
9.	255	162	143	445	893	72	42	57	32	23	53	71
10,	237	163	153	365	323	181	329	62	26	16	49	63
11.	245	4388	134	282	242	255	190	56	34	29	41	59
12,	199	3638	138	267	209	122	101	50	30	24	36	50
13	152	4395	150	358	466	73	93	42	29	23	96	116
14,	153	1120	139	327	816	1967	68	35	33	19	131	374
15,	143	809	151	241	349	780	215	34	29	21	77	268
16,	148	711	160	203	584	311	280	38	28	19	68	173
17.	156	349	152	191	311	231	368	47	36	17	46	171
18,	171	304	141	174	217	217	171	44	44	25	373	212
19,	164	310	173	176	246	143	401	43	40	25	330	820
20,	177	282	184	160	253	111	161	37	31	25	143	445
21,	168	135	1163	146	297	98	120	33	33	30	99	252
22,	234	213	651	131	196	97	133	26	31	28	54	172
23,	213	202	329	118	278	839	120	25	29	27	382	138
24,	152	182	219	125	204	447	84	33	28	23	385	182
25,	146	1555	196	127	198	276	64	34	26	28	1236	762
26	143	1661	180	138	173	216	90	30	31	23	1597	249
27.	156	363	184	131	138	153	225	32	30	58	280	203
28,	707	225	550	136	181	120	378	27	27	114	168	179
29,	1191	----------	535	121	148	100	171	25	25	87	145	123
30,	877	----------	1302	106	109	88	111	23	35	89	134	102
31,	359	----------	1827	----------	104	----------	84	29	----------	58	----------	91

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT) MONTGOMERY COUNTY, PA.

1887.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	425	274	326	203	118	93	36	1416	52	101	46	53
2,	338	193	264	212	120	136	34	537	50	79	49	40
3,	246	184	269	250	110	140	31	259	50	65	42	42
4,	153	269	217	242	109	103	29	158	42	82	41	42
5,	90	244	198	197	103	57	1129	133	42	65	40	67
6,	85	196	194	157	92	55	1474	117	53	84	22	95
7,	110	674	395	144	173	101	290	139	71	54	23	77
8,	99	1160	969	133	279	115	156	95	53	47	26	63
9,	90	874	788	138	286	89	130	83	31	39	39	58
10,	76	515	1156	121	180	71	437	66	29	36	47	124
11,	112	899	649	128	139	61	168	66	25	47	59	1250
12,	102	592	324	117	119	47	107	82	559	46	68	372
13	92	244	285	104	96	41	74	84	278	41	51	195
14,	908	206	277	104	79	47	62	66	151	46	42	163
15,	1107	648	208	102	63	41	54	54	111	41	54	384
16,	401	658	190	112	71	37	49	68	56	33	52	523
17,	288	377	163	98	74	36	373	67	63	30	48	207
18,	356	2369	162	143	64	47	129	114	51	40	47	128
19,	280	2061	170	279	55	52	79	128	49	48	47	180
20.	205	530	149	322	54	50	68	77	74	45	106	187
21,	152	412	160	166	52	55	60	58	53	77	126	267
22,	261	501	530	133	45	49	70	58	52	136	91	325
23	641	428	469	146	41	887	627	239	66	72	70	300
24,	4099	703	365	201	54	295	561	919	50	54	57	238
25,	869	417	763	155	71	123	214	266	39	66	60	177
26.	560	291	546	252	67	73	140	140	48	65	58	174
27.	324	809	314	209	54	56	313	96	59	59	47	155
28,	255	504	883	159	47	60	126	69	53	48	52	756
29,	1987	----------	477	227	48	47	104	68	62	50	66	995
30,	1069	----------	226	176	57	38	131	70	106	46	56	517
31	445	----------	227	----------	60	----------	1198	58	----------	44	----------	432

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT) MONTGOMERY COUNTY, PA.

1888.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	4305	109	278	424	129	136	50	31	55	110	108	179
2	3318	103	279	369	124	82	43	77	49	117	144	149
3,	765	121	311	317	112	69	38	24	38	96	136	138
4,	429	95	338	248	92	62	31	26	44	72	130	143
5,	363	257	252	432	75	57	29	36	40	70	120	135
6,	279	604	207	2750	88	55	29	63	38	69	124	144
7,	318	461	183	556	104	52	30	85	34	348	119	134
8,	773	272	168	347	101	51	27	52	33	161	101	128
9,	528	321	153	279	92	48	25	64	175	109	160	143
10,	325	253	193	1545	92	43	84	60	157	83	541	262
11,	241	241	692	1937	117	46	67	38	99	71	491	173
12,	209	156	1150	525	173	50	44	111	211	79	227	146
13	186	146	352	424	186	82	36	180	229	87	176	120
14,	288	150	396	341	155	40	30	99	142	87	159	92
15,	234	154	380	314	148	39	22	58	101	87	1307	115
16,	255	168	521	517	138	37	19	42	99	81	715	80
17,	209	172	862	456	109	42	22	38	2691	81	381	4786
18,	201	125	512	284	87	47	19	40	5305	90	249	2775
19,	174	159	444	247	123	43	18	32	576	88	1344	601
20.	151	1167	779	251	139	35	27	28	342	107	825	328
21,	128	3285	3539	241	96	36	27	912	2804	104	370	265
22,	121	1171	1533	198	79	32	24	3336	424	81	275	230
23,	112	843	429	174	75	29	19	311	253	85	220	201
24,	104	708	347	159	82	32	13	137	194	114	193	174
25,	113	2459	403	151	95	33	15	92	170	141	190	179
26.	99	2322	934	134	118	28	17	60	207	100	225	191
27.	121	1290	1656	124	111	24	23	52	167	525	368	364
28,	144	368	1009	127	129	32	45	52	125	833	327	469
29,	121	312	1412	120	313	147	55	40	106	592	224	235
30,	108	----------	691	118	171	72	46	43	.93	270	201	161
31,	114	----------	544	----------	124	----------	53	48	----------	184	----------	186

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT) MONTGOMERY COUNTY, PA.

1889.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	190	208	75	351	241	2187	245	1648	60	153	268	352
2,	177	190	125	850	199	729	775	657	80	162	226	335
3,	168	185	605	333	171	320	1401	461	78	187	1004	314
4,	159	169	4235	231	155	232	1063	393	70	113	679	278
5,	215	174	1480	190	142	209	715	412	67	103	353	236
6,	787	190	628	168	125	182	334	334	71	104	266	246
7,	508	166	364	142	115	134	232	229	80	123	224	246
8,	310	143	282	123	105	118	182	181	71	115	246	305
9	834	142	218	115	94	116	150	164	72	108	5389	523
10,	918	128	185	106	93	172	133	181	78	90	1147	327
11.	360	123	175	100	158	170	398	173	83	87	560	287
12,	290	101	165	109	119	374	264	136	132	90	453	281
13.	220	104	160	139	104	239	361	131	222	193	1792	221
14,	203	122	165	143	127	153	440	1234	252	285	1421	300
15,	183	104	158	113	137	387	4016	1613	208	389	508	366
16,	178	197	150	105	110	754	550	352	219	231	373	322
17,	1558	791	150	93	86	446	276	227	3130	150	300	616
18,	634	1182	166	91	76	752	199	181	3020	131	330	537
19,	374	452	173	91	60	244	188	158	603	119	2268	282
20.	209	219	167	82	343	162	458	143	410	115	1029	355
21,	578	185	257	71	745	133	223	131	302	209	725	297
22,	526	149	558	82	339	168	157	123	234	186	926	252
23.	480	113	302	81	189	119	130	115	173	207	471	234
24,	281	101	206	71	134	93	113	115	173	178	347	198
25,	340	113	184	63	115	90	104	107	439	140	816	193
26	359	114	150	593	148	881	96	100	416	134	620	349
27,	724	102	137	1894	630	627	132	98	261	3356	670	285
28,	871	82	173	1210	723	249	172	90	185	1202	2803	202
29,	393	----------	175	536	268	175	163	84	153	451	715	181
30,	248	----------	143	262	177	225	598	74	139	294	462	171
31,	235	----------	126	----------	232	----------	5567	67	----------	256	----------	161

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT) MONTGOMERY COUNTY, PA.

1890.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	151	192	687	415	133	104	45	54	83	55	140	64
2,	189	156	372	377	135	136	447	62	71	57	129	84
3,	171	213	289	290	117	176	535	49	60	948	125	78
4,	193	249	237	1246	153	167	304	49	64	249	118	125
5,	188	298	225	1124	1084	117	149	54	69	137	115	130
6,	238	192	202	387	536	127	95	74	63	182	112	110
7,	186	148	190	360	456	179	71	77	62	451	106	116
8,	172	3699	245	381	283	120	60	65	59	329	89	133
9,	152	7051	165	1149	220	98	58	148	59	192	83	124
10,	141	445	215	847	181	89	52	88	64	135	91	94
11,	142	1521	736	407	165	92	48	64	54	112	138	93
12,	132	303	806	316	243	243	43	70	57	108	196	86
13	143	257	444	277	145	664	38	62	796	102	140	85
14,	132	1030	1156	254	510	189	37	85	331	135	117	80
15,	1368	874	1397	225	1172	125	52	95	842	143	104	70
16,	1215	325	626	199	436	103	72	64	876	122	92	71
17,	440	287	412	191	268	97	88	45	453	821	200	314
18,	202	257	351	177	202	95	125	92	213	264	308	1006
19,	236	228	306	171	175	79	89	119	161	186	174	298
20	386	827	352	167	288	60	61	803	120	191	136	183
21,	341	827	1507	157	375	67	46	260	95	156	112	132
22,	201	248	4048	146	187	122	54	267	91	129	102	145
23,	144	212	2082	139	147	105	53	162	87	623	92	136
24,	154	363	699	143	133	107	48	106	75	1754	91	121
25,	154	357	510	198	122	93	109	91	71	632	94	104
26	145	332	855	215	1514	64	1018	91	60	349	80	135
27,	190	259	425	200	2510	55	212	699	98	246	79	108
28,	129	527	1583	203	497	49	115	256	86	191	73	97
29,	138		801	160	278	48	113	139	71	173	76	100
30,	368		459	142	206	50	103	124	68	238	71	108
31,	254		395		179		71	101		171		93

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT) MONTGOMERY COUNTY, PA.

1891.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	75	1917	238	433	105	48	28	163	236	54	51	196
2,	1931	892	206	364	103	54	28	113	210	48	42	53
3,	941	760	288	870	214	50	34	84	156	50	42	51
4,	298	607	201	421	243	46	36	172	129	38	37	1225
5,	219	322	211	315	139	45	33	187	2367	38	44	1184
6,	176	260	199	242	115	40	36	146	880	38	49	256
7,	149	451	217	211	94	66	33	144	396	42	37	734
8,	128	762	236	179	90	117	43	74	235	73	27	456
9.	101	652	711	174	92	78	77	53	178	88	30	225
10,	94	977	1260	165	78	52	53	48	145	59	38	169
11,	1705	424	509	379	83	41	37	46	120	42	89	113
12,	3431	303	551	786	76	37	29	45	108	49	124	76
13.	400	272	1352	320	65	36	23	58	99	51	71	75
14.	246	239	630	233	67	32	31	58	91	45	59	75
15,	206	181	314	205	68	34	45	220	85	42	41	75
16,	168	1312	462	181	96	38	43	151	80	49	52	75
17,	206	1323	233	180	97	38	38	86	77	49	123	75
18,	483	781	224	177	77	55	162	228	71	40	193	75
19,	304	410	209	160	78	69	413	406	66	31	110	75
20,	239	363	883	147	72	65	142	155	51	275	71	60
21,	209	832	4803	135	70	58	73	109	52	173	79	59
22,	3945	1012	1275	140	67	84	54	176	66	134	50	80
23.	970	432	1007	158	59	73	47	116	49	220	114	895
24,	390	339	640	155	61	54	81	1169	45	118	303	1197
25,	539	342	426	129	59	36	91	1915	53	72	138	928
26	446	397	325	107	60	30	47	374	49	67	100	791
27,	379	381	298	111	72	20	45	355	47	79	94	779
28,	341	215	299	113	65	27	46	573	47	79	83	408
29,	782		278	104	51	26	812	274	40	70	66	307
30,	1315		245	103	55	28	425	362	52	48	49	725
31,	852						352	368		48		261

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT) MONTGOMERY COUNTY, PA.

1892.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	201	184	2073	229	83	127	275	239	75	26	31	174
2,	1482	202	610	213	100	105	184	146	67	24	29	180
3,	861	217	246	237	167	90	375	211	56	22	26	117
4,	303	178	338	238	158	479	557	126	36	26	26	106
5,	235	201	319	208	122	150	192	71	32	28	34	100
6,	196	146	311	183	106	144	111	52	33	24	32	89
7,	204	155	393	164	114	124	78	45	34	22	26	71
8,	214	191	1673	153	95	96	58	41	32	27	27	427
9,	198	216	1341	138	85	93	51	37	29	28	32	369
10,	180	185	625	125	84	429	46	36	28	26	295	186
11,	158	173	437	122	71	182	45	134	31	30	319	130
12,	182	126	458	120	77	110	42	359	28	32	133	116
13,	3674	121	262	112	74	84	40	135	20	26	76	120
14,	3769	137	190	127	94	69	38	62	71	26	54	357
15,	1066	147	207	265	263	58	39	51	90	29	652	550
16,	572	154	178	212	214	50	37	51	54	23	2836	297
17.	412	113	167	146	102	297	27	39	40	24	472	231
18,	404	96	145	133	111	149	32	34	34	29	769	180
19,	1879	97	153	128	117	71	31	35	27	31	602	152
20,	699	131	150	111	897	71	26	28	23	30	268	142
21,	412	159	165	129	365	77	36	25	27	31	192	124
22,	316	154	153	204	420	57	36	24	33	30	156	112
23,	300	158	173	247	337	41	23	24	42	29	168	117
24,	275	151	462	169	241	49	18	26	56	40	88	100
25,	288	144	906	131	160	65	18	51	59	43	76	48
26	251	189	570	125	872	59	20	571	61	33	84	58
27.	207	209	1688	106	1491	64	23	155	58	30	68	58
28,	178	155	1074	87	400	171	22	87	46	29	326	52
29,	176	158	1479	91	219	102	88	68	40	17	506	45
30,	185	----------	315	102	175	80	176	62	57	4	229	35
31,	168	----------	259	----------	155	----------	379	72	----------	32	----------	33

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT) MONTGOMERY COUNTY, PA.

1893.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	258	257	213	157	249	78	36	21	50	26	43	108
2,	1169	597	264	144	343	78	37	30	46	30	41	143
3,	268	702	252	138	998	158	37	25	46	27	42	301
4,	166	535	202	136	5139	96	36	22	44	24	867	806
5,	128	335	184	118	857	86	36	19	43	25	1470	265
6,	128	244	187	101	979	156	34	16	41	25	372	199
7,	94	1021	168	113	479	197	35	14	36	30	202	204
8,	93	714	217	208	349	107	35	15	38	29	158	158
9,	122	383	2224	177	283	68	63	18	41	26	386	137
10,	138	3247	3546	190	185	59	62	22	32	27	168	168
11,	128	1534	1221	392	201	51	46	24	32	28	102	243
12,	165	512	3401	345	185	54	40	24	38	29	84	171
13,	170	602	1493	172	177	58	39	22	28	32	87	126
14,	145	854	1039	436	177	49	39	22	25	1939	91	101
15,	132	913	937	1537	183	44	33	19	40	105	160	109
16,	138	1190	385	506	260	38	97	14	978	53	177	989
17,	169	566	320	299	548	37	118	13	315	50	112	1091
18,	190	300	325	235	249	37	60	13	140	36	88	346
19,	174	318	297	196	175	43	42	16	93	30	71	226
20,	165	251	275	486	138	40	33	1129	67	34	76	137
21,	172	224	353	1061	122	38	24	289	52	34	84	139
22,	173	226	369	407	115	63	22	92	43	34	341	121
23	171	193	315	268	116	86	26	55	39	38	231	135
24,	160	173	340	212	115	71	31	1166	34	74	133	137
25,	138	163	335	201	106	43	28	269	33	78	104	141
26	118	153	300	195	97	77	23	110	36	45	78	177
27,	102	147	240	320	91	93	21	59	38	43	83	113
28,	102	166	206	355	88	67	24	44	29	263	1118	98
29,	116	----------	178	211	97	54	26	187	21	161	347	129
30,	258	----------	172	186	96	39	23	150	25	93	199	149
31,	304	----------	169	----------	84	----------	14	69	----------	65	----------	117

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT) MONTGOMERY COUNTY, PA.

1894.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	109	138	166	120	96	509	131	23	17	36	412	78
2,	101	120	197	120	76	348	82	88	27	36	193	339
3,	101	98	464	109	57	277	70	154	25	46	908	364
4,	97	68	776	149	61	235	45	109	14	55	428	176
5,	120	74	822	333	64	212	40	57	15	63	805	126
6,	153	88	1045	175	103	207	571	42	15	51	786	114
7,	145	80	1024	135	128	206	241	35	17	38	369	103
8,	125	88	524	128	91	191	99	29	249	45	350	125
9,	111	704	390	123	67	167	68	31	483	36	429	387
10,	92	1002	311	117	52	143	55	33	137	2335	303	223
11,	74	638	280	168	48	131	43	31	292	530	261	638
12,	62	343	249	329	48	118	38	31	101	182	188	4132
13,	59	198	214	1119	41	118	38	35	59	209	165	1641
14,	58	182	188	898	36	121	36	52	43	290	161	446
15,	67	172	169	446	38	104	34	57	43	160	146	326
16,	80	160	176	239	38	91	224	47	40	118	123	266
17,	89	152	170	229	37	84	44	43	63	98	133	226
18,	92	975	136	190	40	80	29	35	1123	80	178	187
19,	80	1175	136	170	52	81	23	41	2490	59	130	161
20,	69	1284	142	163	1634	77	23	57	934	51	111	151
21,	56	632	132	183	8769	72	31	50	243	48	115	145
22,	74	442	161	269	3787	64	46	46	144	49	126	136
23,	88	308	479	262	539	60	38	40	99	55	119	117
24,	80	163	291	168	3541	132	48	38	90	61	120	114
25,	97	187	156	138	1398	298	75	36	71	717	101	111
26,	88	165	195	121	708	113	45	30	47	309	95	137
27,	62	154	161	113	566	94	38	24	54	179	100	123
28,	55	157	126	105	2442	85	38	22	51	130	78	130
29,	76	----------	158	93	1822	68	37	32	46	108	70	145
30,	147	----------	168	94	541	132	35	26	43	98	72	119
31,	168	----------	138	----------	519	----------	31	14	----------	513	----------	102

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT) MONTGOMERY COUNTY, PA.

1895.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	102	138	1192	168	236	51	393	31	30	16	84	51
2,	80	128	1235	327	163	47	151	34	30	16	82	43
3.	80	122	454	463	133	43	70	34	33	18	64	155
4,	86	136	418	252	128	62	56	35	31	20	47	95
5,	84	143	416	181	114	79	667	39	31	25	54	67
6,	115	86	240	158	101	138	489	31	29	5	54	55
7,	607	98	249	143	108	115	172	22	22	21	44	45
8,	839	158	1238	1910	106	70	105	24	19	8	45	43
9,	544	178	789	4203	94	50	71	28	23	19	44	38
10,	354	222	689	682	78	50	48	24	26	13	33	41
11,	2372	243	711	380	73	55	45	75	26	17	49	45
12,	905	214	323	296	134	44	40	133	22	25	65	37
13,	566	196	845	1018	151	52	39	104	18	117	38	33
14,	333	186	1528	845	205	68	37	58	16	177	43	33
15,	244	171	448	393	271	55	33	39	6	63	26	30
16,	242	152	312	286	151	40	37	31	24	50	52	31
17,	249	136	242	232	114	36	43	31	20	41	46	25
18,	187	134	313	200	101	34	40	31	18	29	49	29
19,	157	141	512	175	87	30	36	29	22	33	55	30
20,	137	154	476	151	80	28	31	18	26	11	52	119
21,	136	184	317	156	91	30	26	18	26	22	41	127
22,	142	225	324	154	120	34	23	26	20	25	36	486
23.	151	193	306	154	92	36	26	27	27	24	35	197
24,	148	118	334	138	76	32	33	23	27	26	18	118
25,	125	114	456	126	72	31	36	18	24	22	39	80
26.	2212	117	496	126	59	35	27	19	24	24	37	71
27,	559	198	282	266	236	88	21	23	22	12	39	117
28,	235	820	280	247	348	104	23	24	22	33	131	117
29,	191		222	177	139	87	21	26	4	21	85	71
30,	178		181	236	85	141	34	38	18	21	55	110
31,	165		161		66		30	41		24		1191

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT) MONTGOMERY COUNTY, PA.

1896.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	327	56	586	351	63	65	51	123	21	179	42	236
2,	150	91	338	322	55	53	39	84	20	60	43	160
3,	124	106	188	256	57	42	44	73	21	45	54	126
4,	91	111	124	189	71	39	41	64	22	38	57	125
5,	58	85	119	161	71	36	38	45	38	45	2439	116
6,	47	6789	95	156	50	34	36	40	758	66	829	97
7,	42	2181	99	166	45	28	39	40	212	60	295	109
8,	31	381	92	148	49	30	60	35	81	41	344	120
9.	37	347	72	117	42	41	260	28	52	41	377	406
10,	40	335	78	120	34	91	457	83	42	39	217	223
11,	35	291	80	133	37	95	133	66	39	33	191	150
12,	34	196	59	120	38	44	69	30	30	585	282	118
13.	34	177	63	108	37	31	47	34	23	2711	231	102
14,	37	569	67	99	23	36	41	32	23	476	178	100
15,	38	360	55	86	39	78	40	25	30	259	137	98
16,	31	415	60	80	39	82	41	25	39	164	119	85
17,	20	121	82	81	25	118	38	26	37	122	113	87
18,	22	123	96	98	25	177	33	31	358	98	100	95
19,	30	112	1854	109	32	75	25	34	95	82	89	81
20,	31	112	3150	89	34	49	23	32	81	71	82	60
21,	34	90	875	125	65	39	1532	32	56	63	77	78
22,	34	54	618	127	92	40	863	31	52	63	75	70
23.	36	52	521	83	65	36	1143	25	39	52	84	55
24,	193	93	259	81	38	37	169	26	31	125	88	58
25,	379	116	316	149	35	66	115	31	30	138	87	58
26	156	75	655	114	35	94	79	26	33	82	72	55
27.	105	70	700	84	38	125	70	26	34	68	65	52
28,	86	69	301	78	165	71	177	31	26	60	175	55
29,	60	638	2520	66	300	124	297	24	36	57	895	58
30,	43		1052	67	119	88	1938	17	287	57	379	47
31,	43		465		74		250	20		53		36

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT) MONTGOMERY COUNTY, PA.

1897.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	51	46	131	88	82	105	45	86	35	22	70	136
2,	78	55	128	85	2580	88	46	180	113	18	3089	113
3,	85	55	162	76	1330	80	33	61	159	13	103	95
4,	124	49	246	67	381	124	30	54	75	17	169	161
5,	318	55	211	139	268	180	34	213	67	17	100	1942
6,	547	965	545	200	199	150	34	117	37	10	70	513
7,	83	4083	315	149	148	105	29	58	33	15	47	386
8,	76	846	200	115	124	118	35	55	29	22	34	207
9,	61	346	172	1643	112	899	43	45	34	18	96	168
10,	51	204	180	988	124	473	38	53	32	8	120	146
11,	52	171	198	311	131	106	30	201	13	15	84	133
12,	47	123	221	218	138	127	203	120	8	23	106	360
13,	38	110	212	185	4747	106	248	66	29	22	88	355
14,	49	115	168	153	1566	97	38	49	29	29	41	1909
15,	45	110	199	323	1003	84	56	48	33	28	44	2561
16,	39	161	189	316	425	75	44	149	36	17	60	229
17,	46	184	129	265	365	75	41	167	29	16	87	325
18,	117	413	139	216	300	85	213	68	26	27	97	249
19,	150	351	322	166	173	85	292	50	23	30	70	185
20	96	153	730	129	153	64	130	47	19	14	51	145
21,	1291	347	392	116	217	61	104	41	23	16	51	151
22,	504	664	242	110	221	63	588	39	25	23	67	166
23.	157	1242	201	99	137	63	231	33	22	20	60	141
24,	115	457	564	94	202	51	128	30	35	28	60	99
25,	136	244	405	80	442	46	77	112	46	88	62	73
26	130	193	208	84	201	50	60	123	38	89	93	71
27,	93	158	167	94	126	37	475	52	29	62	1117	89
28,	81	136	146	76	103	35	1901	37	31	50	317	94
29,	69		128	70	93	38	729	26	27	49	219	82
30,	51		120	61	83	35	236	27	22	47	183	88
31,	48		98		99		127	28		39		130

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT) MONTGOMERY COUNTY, PA.

1898.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	163	145	153	292	201	113	29	32	40	28	129	363
2,	37	137	138	213	160	103	30	38	28	20	90	242
3,	69	147	168	178	147	96	34	46	23	29	76	233
4,	62	129	183	157	141	93	29	49	19	31	70	1916
5,	45	114	153	151	148	75	29	139	27	23	78	3406
6,	59	114	127	171	199	60	30	104	25	21	63	569
7,	101	116	115	184	497	63	28	50	34	18	45	352
8,	121	125	115	155	3493	59	29	43	51	23	94	218
9	102	140	107	129	1360	46	57	116	45	26	52	100
10,	94	182	107	113	495	37	64	332	29	31	1422	102
11,	106	548	102	121	398	39	39	393	25	27	1100	92
12,	205	541	99	127	495	46	35	145	22	27	272	97
13,	302	414	99	108	580	54	37	82	19	30	173	100
14,	253	307	98	106	415	50	37	56	24	30	167	91
15,	542	248	89	323	1403	41	37	44	25	56	150	78
16,	661	272	76	259	1013	50	37	43	17	56	103	70
17,	296	159	85	170	713	56	18	45	15	40	202	72
18,	166	166	88	122	377	44	28	46	13	45	447	78
19,	147	258	88	113	392	49	39	258	12	39	3808	111
20.	585	5552	74	126	289	64	190	71	14	71	602	890
21,	704	1650	133	125	345	66	115	60	17	57	312	384
22,	375	739	426	102	232	56	73	51	27	162	233	552
23,	2758	474	445	95	211	53	51	50	42	116	763	1364
24,	570	332	341	658	255	51	41	47	54	61	403	452
25,	323	265	540	428	422	39	37	47	61	60	317	308
26	454	218	220	433	353	36	39	39	52	235	267	215
27	393	182	173	285	268	37	40	35	43	475	207	189
28,	261	166	282	481	219	41	65	30	43	163	213	150
29,	205		414	641	168	45	74	24	45	93	330	126
30,	166		894	312	153	41	48	24	38	111	395	139
31,	166		456		131		37	38		198		230

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT) MONTGOMERY COUNTY, PA.

1899.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	313	131	651	346	78	76	84	72	53	147	294	68
2,	239	130	635	262	82	66	52	346	440	101	286	114
3,	239	120	589	248	98	49	45	722	922	99	181	84
4,	222	182	753	252	101	38	41	177	318	101	724	69
5,	1014	193	3525	230	84	36	41	90	174	93	309	71
6,	1315	143	975	185	83	36	41	77	106	98	184	56
7,	1476	148	588	245	74	38	36	66	57	119	138	55
8,	394	152	391	1366	70	39	41	52	43	105	109	64
9,	311	174	365	428	87	41	816	48	290	95	107	56
10,	239	183	345	296	73	48	163	157	227	80	104	44
11,	195	158	475	251	101	49	71	1021	213	72	88	43
12,	165	170	1519	219	213	43	43	224	369	67	110	146
13,	150	222	1552	187	129	38	42	90	189	57	112	250
14,	245	236	510	178	125	39	43	66	97	53	62	127
15,	410	225	848	170	123	44	38	54	71	57	62	84
16,	475	255	879	260	83	34	35	46	54	48	92	75
17,	789	233	437	501	93	26	38	52	46	51	77	67
18,	443	683	853	263	201	29	42	42	55	65	60	55
19,	196	992	2423	196	210	27	42	37	58	80	58	133
20	192	1311	780	160	129	26	40	36	748	81	67	182
21,	164	1495	421	146	86	82	33	29	385	67	65	127
22,	145	1507	1146	136	70	65	27	53	206	63	53	79
23,	147	1767	893	118	96	41	25	61	184	57	159	57
24,	1081	869	517	113	98	43	25	44	115	49	200	662
25,	2693	469	417	120	70	83	26	39	110	34	116	531
26	378	1184	534	114	57	110	70	34	3363	34	79	177
27,	289	4043	513	99	60	74	82	502	462	60	75	133
28,	212	883	1002	87	60	165	98	197	258	62	81	91
29,	201		1377	81	71	501	89	84	174	51	66	59
30,	153		555	76	122	220	817	64	168	71	65	51
31,	129		466		93		158	63		78		47

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY, PA.

1900.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	52	168	360	148	84	52	29	84	41	36	41	58
2,	53	178	1648	158	80	55	24	64	31	36	36	55
3,	43	178	1212	148	102	55	34	54	29	36	31	44
4,	35	188	371	138	110	46	62	45	36	31	31	270
5,	32	3606	190	133	84	52	71	51	31	26	36	565
6,	30	772	342	123	60	52	71	47	29	58	36	197
7,	38	284	368	115	56	46	52	36	29	47	41	107
8,	36	1505	219	98	63	49	38	36	26	36	41	75
9	43	1370	203	93	67	44	31	36	31	33	38	67
10,	41	198	188	93	75	23	36	34	31	34	43	58
11,	64	198	193	88	63	43	36	24	22	37	32	58
12,	2071	198	208	135	58	63	64	36	14	31	46	52
13,	460	3112	208	163	52	54	52	41	23	26	67	43
14,	123	772	208	183	56	52	38	31	36	39	42	43
15,	106	284	219	101	63	55	26	26	47	63	31	43
16,	135	203	255	98	58	54	24	26	58	67	31	38
17,	138	198	260	145	58	51	22	31	44	52	29	36
18,	101	188	260	362	58	46	24	122	33	46	24	36
19	126	168	267	1212	585	46	41	198	31	46	20	36
20,	2342	158	699	315	693	49	41	93	31	46	24	41
21,	1147	146	415	195	246	49	24	63	33	41	31	41
22,	358	2501	273	178	129	46	18	54	31	36	36	36
23,	249	1984	255	173	98	46	18	41	33	36	31	44
24,	196	615	267	158	88	37	255	31	38	31	31	55
25,	185	442	193	138	102	34	690	31	36	26	41	63
26	203	375	178	115	102	38	1505	68	33	26	150	63
27.	188	389	168	93	80	41	245	80	36	26	222	47
28,	178	360	158	84	67	46	116	58	36	26	123	47
29,	168		133	84	71	41	71	52	36	26	58	47
30.	158		118	84	67	36	52	46	36	31	58	36
	158		128		58		135	43		41		207

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY, PA.

1901.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	138	52	46	98	124	245	36	38	68	138	46	58
2,	93	46	107	85	115	230	38	44	88	128	46	63
3,	52	46	168	1046	158	372	36	85	84	138	45	172
4,	37	46	178	612	153	184	31	140	75	129	51	325
5,	31	49	209	317	97	131	29	102	71	102	58	145
6,	36	38	138	228	84	120	21	36	71	84	55	93
7,	36	38	106	487	80	320	12	443	67	60	50	75
8,	36	36	65	287	67	547	42	203	47	46	47	59
9,	36	41	204	213	107	171	32	88	38	36	46	64
10,	47	46	279	148	275	111	32	59	43	31	41	136
11,	397	41	4717	110	782	83	31	40	189	36	36	150
12,	1623	36	464	92	667	75	72	41	250	36	41	106
13,	325	41	263	92	284	63	52	46	168	41	52	97
14,	170	41	212	80	178	55	49	52	140	260	52	137
15,	143	36	421	71	138	67	49	52	85	193	46	2754
16,	147	36	324	86	115	67	55	43	67	163	46	354
17,	138	41	244	93	97	58	46	38	84	115	41	179
18,	110	41	178	71	92	52	38	1433	102	84	41	148
19,	75	60	138	58	84	41	41	964	85	51	46	110
20,	52	84	138	113	89	41	36	171	63	41	49	88
21,	49	59	1996	420	94	69	29	173	57	46	49	76
22,	64	36	513	411	88	92	38	125	46	46	46	55
23	67	41	308	224	102	72	52	148	46	46	46	51
24,	52	38	255	952	102	49	49	228	60	52	368	66
25,	52	29	255	2237	140	52	43	273	67	58	316	60
26	58	36	361	627	233	47	38	143	52	52	155	119
27.	52	46	604	315	284	41	44	110	46	41	85	1094
28,	46	46	322	215	290	41	49	80	60	55	58	272
29,	46		217	178	711	36	43	71	122	60	55	6017
30,	41		148	158	1113	36	137	109	158	56	55	3521
31,	47		106		365		78	120		56		625

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY, PA.

1902.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	269	119	2657	246	253	47	226	69	51	877	128	172
2,	249	228	1598	199	196	45	124	68	39	394	117	283
3,	193	375	703	157	194	51	79	58	33	215	113	1190
4,	168	307	400	142	191	51	102	45	31	158	109	409
5,	143	236	284	133	162	45	107	45	26	596	104	361
6,	114	168	315	270	140	45	67	45	26	1185	102	270
7,	111	121	301	345	123	45	59	51	26	358	107	204
8,	111	75	284	1628	109	45	54	49	26	228	101	224
9,	111	75	1443	1564	96	45	51	43	77	158	83	209
10,	111	75	2840	738	88	45	43	43	171	119	65	194
11,	101	66	1753	426	79	45	43	49	69	380	51	184
12,	92	51	835	301	74	45	45	212	38	2350	71	318
13,	92	45	828	238	75	45	43	114	31	522	75	257
14,	83	45	497	188	79	56	38	50	28	288	75	220
15,	66	45	352	166	79	67	35	49	29	219	73	209
16,	58	45	323	154	73	71	35	37	28	193	72	4200
17,	51	45	972	150	61	83	40	24	26	165	89	3440
18,	45	45	406	143	53	79	43	30	28	140	104	751
19,	45	45	273	134	57	67	40	33	28	133	92	698
20	45	45	235	119	66	62	75	34	26	123	84	587
21,	1084	137	219	114	69	61	82	38	26	110	79	3334
22,	5259	1798	198	118	67	103	113	39	26	101	55	5011
23,	388	800	178	112	64	66	66	32	28	99	46	905
24,	221	485	163	105	56	54	53	20	30	95	79	522
25,	160	1104	143	100	59	54	113	18	44	89	106	405
26	142	6035	123	95	65	227	150	30	1379	78	434	367
27,	688	2569	118	88	77	143	73	38	1684	71	438	332
28,	238	6843	123	86	96	101	58	254	360	1045	295	292
29,	194		944	159	84	68	58	324	313	428	188	279
30,	168		765	581	61	175	58	101	186	260	147	267
31,	139		341		51		66	69		163		248

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY, PA.

1903.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	230	301	1103	351	119	47	125	60	192	69	60	55
2,	259	302	496	254	113	53	90	41	141	66	61	53
3,	3840	293	419	213	107	53	76	43	115	66	66	57
4,	911	2520	341	468	126	50	143	69	88	60	73	57
5,	541	999	318	423	128	45	118	204	77	46	77	60
6,	493	348	290	270	111	45	60	131	69	38	81	60
7,	367	312	255	415	111	60	55	129	59	36	79	60
8,	322	351	391	1470	102	100	53	128	60	85	59	60
9,	249	362	568	1876	96	99	46	80	60	4236	54	60
10,	265	218	468	514	97	77	45	67	64	3142	67	67
11,	245	474	489	389	88	1147	48	68	69	770	65	75
12,	381	956	406	450	80	1668	46	63	64	467	58	75
13	290	437	301	463	83	296	49	55	54	281	57	611
14,	300	351	275	1737	82	198	54	62	49	219	57	491
15,	198	386	242	2126	72	235	58	69	51	177	58	224
16,	198	803	210	911	73	172	52	60	53	138	75	141
17,	232	481	196	581	75	138	43	54	48	131	139	114
18,	221	404	186	427	67	128	2055	54	300	215	349	107
19,	188	327	171	336	66	99	862	51	100	188	109	62
20,	166	285	168	296	67	202	1011	51	59	163	104	2813
21,	2017	282	199	255	65	825	955	51	49	125	90	1196
22,	702	233	520	217	54	295	329	47	52	119	73	397
23,	328	207	2778	203	44	378	214	40	56	133	79	209
24,	219	208	1278	195	52	512	145	40	60	96	95	168
25,	222	208	544	183	46	278	113	48	49	62	84	163
26	203	208	380	173	38	199	36	50	40	67	66	140
27,	195	481	342	165	38	156	74	47	33	81	59	119
28,	1295	6181	305	155	45	109	62	473	29	70	59	124
29,	700		249	142	48	168	52	976	41	61	55	92
30,	856		252	128	46	200	102	131	58	62	57	71
31,	444		555		43		614	233		65		68

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY, PA.

1904.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	54	121	670	1763	133	305	208	44	53	82	80	97
2,	97	154	613	921	107	398	91	58	46	58	74	92
3,	87	119	694	365	93	594	67	106	46	60	68	86
4,	133	124	818	252	74	288	45	96	46	65	62	69
5,	131	106	211	214	64	503	38	60	46	57	55	78
6,	124	88	174	201	62	381	39	269	60	61	51	95
7,	126	283	3581	212	55	2583	164	126	55	63	59	88
8,	128	1351	2629	228	53	406	333	63	36	52	67	88
9,	126	243	391	279	55	231	157	46	34	46	64	86
10,	121	167	216	294	69	183	157	490	33	46	59	78
11,	114	114	178	231	70	158	167	1376	34	54	75	75
12,	106	103	152	198	60	131	104	258	47	159	84	75
13,	106	103	132	167	52	100	76	130	52	258	147	75
14,	765	61	128	138	53	88	72	1885	1594	106	634	66
15,	537	71	128	118	75	84	63	367	5460	76	462	72
16,	340	118	171	99	123	61	49	172	457	63	451	100
17,	233	67	211	98	94	60	45	121	224	59	460	98
18,	226	57	299	97	67	64	44	94	148	62	306	82
19,	226	55	1095	92	54	52	50	70	126	61	233	95
20,	148	69	892	79	65	55	75	570	100	58	261	102
21,	139	79	349	65	69	153	84	768	76	3821	290	92
22,	1087	3815	337	61	64	384	61	250	71	820	238	92
23	4465	563	447	59	65	112	45	334	67	293	194	92
24,	671	497	320	60	58	66	42	167	64	202	176	150
25,	247	359	256	61	45	45	42	120	58	163	156	214
26	205	189	353	68	35	43	53	92	69	142	128	199
27,	224	105	360	130	37	41	128	64	75	124	102	312
28,	164	129	228	186	37	40	99	60	70	103	108	1006
29,	116	376	180	183	36	66	66	60	70	87	113	659
30,	118	----------	180	163	52	88	62	58	83	80	101	320
31,	124	----------	289	----------	1117	----------	54	58	----------	84	----------	214

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY, PA.

1905.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	251	128	150	212	103	49	27	31	125	45	84	323
2,	488	128	128	176	110	47	32	30	83	43	79	207
3,	376	128	128	163	105	47	45	34	655	217	65	703
4,	326	128	128	165	95	41	46	39	1026	146	54	1654
5,	267	128	123	410	93	38	49	29	477	92	54	701
6,	322	168	123	814	95	44	58	84	220	79	65	322
7,	5708	208	128	321	93	54	49	217	145	68	80	224
8,	837	198	162	243	87	59	40	123	110	58	72	196
9,	380	198	539	198	81	56	40	109	88	54	65	155
10,	328	219	1392	188	84	47	39	87	79	53	65	146
11,	261	219	1812	310	75	39	36	68	164	195	55	168
12,	596	231	1829	279	65	41	37	53	1937	582	48	150
13,	602	307	1060	233	65	54	49	44	401	115	50	119
14,	301	332	734	137	62	55	58	39	216	112	50	114
15,	234	280	697	78	63	47	52	438	162	83	43	96
16,	205	242	884	113	74	44	45	3241	130	75	48	121
17,	162	224	1220	145	80	81	38	273	112	73	54	75
18,	128	219	2018	136	87	35	31	142	443	75	46	71
19,	128	203	2486	128	92	34	30	88	392	92	43	76
20,	153	198	1473	128	81	33	29	60	423	1063	48	66
21,	173	204	3019	130	63	32	29	53	507	570	54	1136
22,	152	200	1267	135	52	39	26	48	206	335	57	514
23,	137	189	810	122	52	60	19	44	155	273	54	372
24,	117	173	547	117	50	61	25	63	129	119	57	305
25,	167	170	1501	120	45	53	31	1393	111	111	53	185
26	140	190	683	106	78	50	30	697	101	127	43	146
27,	135	279	610	106	43	45	32	235	105	175	44	140
28,	162	201	645	111	31	36	60	142	107	94	60	132
29,	137	----------	336	111	26	34	27	105	85	80	3156	599
30,	128	----------	292	103	34	32	29	104	58	81	893	350
31,	128	----------	254	----------	48	----------	28	169	----------	84	----------	182

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY, PA.

1906.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	152	168	198	394	120	146	92	62	57	34	282	45
2,	138	140	178	297	113	124	78	55	41	42	163	47
3,	161	118	2115	238	115	105	92	1339	38	48	114	61
4,	1512	108	4054	207	112	84	422	1690	46	52	76	62
5,	649	92	558	200	102	75	194	242	44	214	61	43
6,	356	92	382	212	104	75	112	93	43	198	58	107
7,	181	86	318	202	116	82	84	102	43	77	58	213
8,	193	86	311	176	114	90	71	88	43	58	58	111
9,	173	106	302	1190	114	82	68	106	34	58	58	58
10,	192	121	262	3027	118	80	72	106	26	58	47	95
11,	171	110	224	687	106	76	68	84	26	51	29	244
12,	218	104	203	422	96	63	59	71	90	44	75	163
13,	314	118	178	326	84	52	55	58	292	42	84	122
14,	244	170	163	276	75	48	60	55	92	36	64	88
15,	257	218	168	2533	75	51	93	49	44	38	64	84
16,	581	172	188	1110	76	54	55	45	41	46	75	112
17,	452	144	196	431	72	69	47	41	31	38	80	455
18,	290	104	140	332	68	775	62	39	31	36	295	472
19,	252	128	166	286	64	2195	61	36	46	47	778	177
20,	216	225	183	202	58	442	51	29	41	153	263	312
21,	154	1498	178	228	55	232	52	64	26	240	200	743
22,	168	2165	158	204	54	302	52	88	31	202	221	537
23,	249	481	129	195	51	247	43	60	33	148	184	316
24,	689	328	134	190	46	248	83	83	29	122	128	185
25,	312	592	118	170	50	178	83	49	42	509	88	152
26	214	600	154	157	45	124	46	47	71	352	75	108
27.	188	258	1379	143	51	106	47	78	34	192	75	99
28,	493	182	2000	129	1865	99	39	171	26	132	75	88
29,	286		1206	118	1543	86	64	111	26	120	60	92
30,	190		530	120	299	92	102	71	26	106	45	130
31,	168		746		183		93	62		110		3363

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY, PA.

1907.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	1770	128	92	152	163	56	212	31	30	364	168	254
2,	586	130	292	148	168	1139	112	31	30	248	608	233
3,	419	141	611	128	128	506	190	57	36	199	1638	213
4,	589	150	450	118	212	259	115	65	40	224	402	209
5,	493	150	288	114	236	194	71	46	56	242	260	199
6,	312	150	204	102	151	154	51	43	84	180	530	181
7,	265	150	159	92	136	112	46	34	80	145	3113	179
8,	260	150	144	270	133	85	52	26	62	1381	556	185
9,	598	150	260	290	175	75	58	236	96	470	389	211
10,	232	150	394	279	152	74	55	160	120	294	626	2048
11,	160	150	244	199	146	80	105	84	869	232	545	920
12,	948	150	183	148	126	67	165	56	626	198	326	446
13,	852	131	977	125	112	67	130	51	188	169	264	316
14,	1218	112	3452	125	100	71	72	51	124	150	220	423
15,	681	112	1854	120	94	78	53	46	88	133	188	1005
16,	416	112	1642	111	142	74	42	38	66	114	169	687
17,	266	111	1220	106	280	67	42	31	62	106	158	479
18,	238	111	802	96	210	64	219	31	56	101	280	362
19,	264	106	732	98	156	60	174	31	132	94	706	308
20,	1140	92	1583	108	106	54	102	29	219	86	342	258
21,	572	105	856	103	68	59	132	26	194	94	402	231
22,	288	118	552	96	55	67	92	29	168	94	560	214
23.	242	118	475	130	39	62	65	31	4017	88	353	2816
24,	204	114	404	1009	38	52	52	79	2163	84	842	1230
25,	161	111	320	324	39	46	42	274	582	76	1616	494
26	164	111	254	226	37	46	35	116	284	72	823	396
27,	168	93	221	139	64	46	31	60	201	80	564	338
28,	154	84	210	148	92	46	31	45	320	1286	404	304
29,	141		203	138	84	60	31	40	4851	620	346	278
30,	130		188	138	93	463	31	33	717	359	304	526
31,	128		162		118		31	31		216		543

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY, PA.

1906.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	268	527	246	249	193	178	53	54	31	54	39	41
2,	216	592	198	338	199	128	54	45	28	46	39	41
3,	176	345	217	274	158	96	44	36	34	48	42	41
4,	174	292	208	190	138	75	51	36	26	42	50	38
5,	158	249	185	165	122	75	58	42	17	38	39	33
6,	188	249	179	173	114	74	53	40	19	48	39	38
7,	836	212	680	160	1991	34	47	55	14	64	35	219
8,	1006	186	618	208	1126	42	46	65	14	54	27	236
9,	270	178	951	331	754	58	48	51	14	41	33	130
10,	177	168	442	208	434	55	48	46	10	38	41	84
11,	171	148	336	194	320	44	42	78	14	33	38	71
12,	2246	138	322	172	254	41	41	71	18	33	36	89
13,	1616	169	338	141	203	46	51	62	19	41	36	114
14,	522	560	344	140	172	46	48	52	17	45	41	114
15,	320	5572	354	145	676	62	67	43	15	42	38	93
16,	282	846	469	245	746	421	74	37	13	38	36	71
17,	244	453	305	179	267	152	55	34	10	33	43	71
18,	208	279	822	144	878	91	49	40	12	28	44	84
19,	182	437	2256	173	396	78	43	40	14	28	48	102
20,	158	975	641	208	278	72	77	76	14	27	62	102
21,	164	501	398	184	261	64	99	88	16	31	63	102
22,	164	360	318	154	224	68	43	46	19	36	46	93
23,	160	254	325	188	270	71	72	32	18	33	43	62
24,	164	212	439	125	293	71	554	29	22	33	50	54
25,	164	175	326	137	206	62	1350	38	23	60	50	58
26	164	3787	254	150	162	58	693	65	21	206	52	66
27,	243	838	209	129	250	56	275	102	20	226	46	71
28,	312	372	216	114	129	50	110	71	25	93	41	62
29,	246	298	295	116	110	45	90	50	106	96	39	58
30,	188	--------	295	116	248	43	65	41	92	88	38	57
31,	188	--------	249	--------	205	--------	55	36	--------	52	--------	61

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN' CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY, PA.

1909.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	66	101	242	192	704	86	53	23	18	22	20	64
2,	58	76	418	158	632	76	48	25	26	24	29	49
3,	54	61	367	155	334	74	37	28	46	20	22	49
4,	59	52	292	152	406	81	37	30	41	17	52	44
5,	1319	63	245	138	352	99	56	31	24	17	35	23
6,	2028	177	263	129	188	110	69	28	14	20	41	28
7,	366	206	276	127	192	99	42	20	14	29	26	34
8,	158	122	376	118	241	82	22	16	12	26	22	24
9,	153	104	687	94	198	88	47	22	10	21	25	34
10,	120	1119	973	88	204	108	27	29	12	22	19	36
11,	120	642	734	88	281	104	29	29	12	22	18	31
12,	128	303	357	90	188	86	24	26	11	20	26	29
13,	108	222	320	98	138	78	26	21	18	16	32	1460
14,	95	322	320	771	123	84	21	22	30	24	18	3181
15,	100	405	266	840	114	82	26	25	36	37	33	325
16,	102	1113	205	366	100	81	33	18	29	38	42	154
17,	90	1040	186	233	91	90	28	16	20	30	26	86
18,	96	387	158	191	87	186	42	38	18	26	26	67
19,	124	301	143	176	82	130	42	30	16	19	26	59
20,	50	1809	168	677	77	75	26	31	16	13	36	37
21,	49	470	143	835	108	52	36	22	20	16	31	23
22,	58	320	123	866	297	52	38	30	22	24	36	26
23,	98	750	112	616	184	56	28	24	18	42	26	26
24,	262	3372	112	559	151	52	26	14	30	32	26	26
25,	600	1174	1072	316	108	49	40	10	39	32	50	55
26	435	418	655	250	86	44	38	13	27	50	58	157
27,	262	348	334	212	90	43	37	26	24	39	64	61
28,	175	283	404	211	594	52	33	30	23	34	43	48
29,	138	----------	316	222	236	51	33	21	50	40	69	75
30,	123	----------	262	998	141	52	33	14	27	32	82	84
31,	118	----------	244	----------	104	----------	28	10	----------	10	----------	64

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY, PA.

1910.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	56	130	2499	62	248	68	31	18	128	17	25	80
2,	59	103	1248	51	167	62	46	25	264	15	17	60
3,	72	107	728	52	146	54	45	18	140	15	34	51
4,	68	120	616	49	156	49	43	18	152	16	663	45
5,	56	128	507	64	154	47	42	96	144	19	967	44
6,	62	128	403	78	124	75	40	109	102	27	379	48
7,	258	98	454	88	102	92	37	55	203	27	195	48
8,	420	70	360	92	82	78	36	64	115	18	138	48
9,	334	104	264	72	135	62	27	294	81	15	107	52
10,	242	134	216	68	155	63	22	318	60	25	86	50
11,	184	165	182	52	130	165	38	462	44	31	71	45
12,	147	231	168	48	98	492	35	285	34	22	67	44
13.	130	90	155	47	74	454	55	75	23	19	61	48
14,	140	144	155	51	84	212	40	51	52	23	64	53
15,	153	68	137	56	90	141	21	42	40	23	70	53
16,	146	100	114	57	72	304	19	49	35	19	66	53
17,	139	356	112	46	100	975	26	58	32	21	59	52
18,	310	1622	118	1667	74	528	26	55	32	25	50	50
19,	583	644	114	666	74	474	10	49	29	25	43	42
20,	624	351	108	450	85	230	32	49	30	81	43	55
21,	1330	2258	129	294	145	164	43	42	34	51	45	70
22,	4591	3454	129	244	206	129	29	39	31	67	42	61
23.	1009	1365	111	180	142	102	18	36	31	62	42	57
24,	476	546	102	366	116	80	16	21	26	58	43	569
25,	308	357	86	1346	96	70	17	23	16	52	40	648
26	226	288	76	688	136	52	25	26	26	46	39	284
27,	193	540	59	358	106	39	22	22	33	41	40	161
28,	177	2112	49	233	102	44	18	17	24	42	40	114
29,	170	----------	55	198	73	50	18	24	18	37	65	107
30,	116	----------	65	380	67	47	10	31	26	24	101	314
31,	158	----------	75	----------	67	----------	6	26	----------	29	----------	264

DAILY DISCHARGE, IN SECOND-FEET, OF PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY, PA.

1911.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	209	164	171	128	126	306	48	49	1066	121	120	179
2,	1105	120	142	112	240	160	40	54	313	1076	110	156
3,	1744	108	133	112	163	111	42	47	175	224	100	159
4,	882	587	125	131	121	93	35	50	122	185	90	185
5,	302	473	126	764	107	75	37	53	96	143	78	154
6,	209	176	132	501	93	518	40	47	90	111	106	140
7,	173	173	131	281	87	263	39	43	84	133	848	139
8,	148	157	127	209	84	155	149	41	76	142	274	146
9,	162	142	135	202	82	102	52	42	71	106	163	141
10,	132	142	376	366	80	76	39	44	76	90	139	135
11,	120	142	426	225	81	56	35	43	150	106	134	140
12,	109	168	232	167	80	344	35	40	115	128	144	132
13	269	209	218	139	72	1072	29	36	84	108	118	116
14,	393	230	202	202	58	633	25	39	64	83	176	108
15,	476	200	1294	474	58	255	43	39	100	72	418	466
16,	259	160	695	259	65	160	50	37	147	80	497	936
17,	178	148	262	187	61	115	1169	38	127	82	258	627
18,	140	382	254	152	54	98	448	46	98	2051	2129	324
19,	111	374	219	172	51	99	139	71	78	771	647	234
20,	102	202	358	1552	48	88	100	64	64	404	354	135
21,	93	167	310	702	46	68	112	41	49	490	270	165
22,	102	148	206	335	46	59	128	40	49	586	230	236
23	111	145	164	354	46	55	80	39	78	1195	196	1026
24,	106	130	136	308	44	56	87	36	52	467	782	436
25,	95	180	113	228	44	50	118	54	38	300	758	278
26	89	346	105	186	46	51	92	75	41	236	296	242
27,	104	414	317	164	46	55	60	84	38	189	238	731
28,	314	265	496	149	42	56	49	98	34	166	230	358
29,	220		254	134	37	55	44	88	80	152	337	204
30.	358		201	122	36	52	40	136	124	139	236	204
31,	186		165		93		40	2087		128		208

ESTIMATED MONTHLY DISCHARGE, PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY.

(Drainage area 152 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1884.					
September,	100	23	45	.30	.33
October,	238	16	51	.34	.39
November,	768	47	124	.82	.91
December,	3425	64	491	3.23	3.72
1885.					
January,	2600	113	431	2.84	3.28
February,	2107	98	327	2.15	2.24
March,	992	67	330	2.17	2.51
April,	3192	92	373	2.45	2.73
May,	805	58	142	.93	1.07
June,	85	16	37	.24	.27
July,	35	9	23	.15	.17
August,	1673	19	163	1.07	1.23
September,	36	8	22	.14	.16
October,	243	8	56	.37	.43
November,	862	46	240	1.58	1.76
December,	2546	67	320	2.11	2.44
The year,	3192	8	205	1.35	18.29
1886.					
January,	3044	143	400	2.63	3.03
February,	4395	135	818	5.38	5.60
March,	1827	134	336	2.21	2.55
April,	4020	106	462	3.04	3.39
May,	3094	79	343	2.26	2.61
June,	1967	72	256	1.68	1.87
July,	400	42	145	.95	1.09
August,	95	23	45	.30	.35
September,	44	22	31	.20	.22
Octobr,	114	16	33	.22	.25
November,	1597	30	210	1.38	1.54
December,	820	44	190	1.25	1.44
The year,	4395	16	272	1.79	23.94
1887.					
January,	4098	76	523	3.44	3.97
February,	2369	184	615	4.05	4.22
March,	1156	149	397	2.61	3.01
April,	322	98	171	1.13	1.26
May,	286	41	96	.63	.72
June,	887	36	103	.68	.75
July,	1474	29	272	1.79	2.06
August,	1416	54	189	1.24	1.43
September,	559	25	83	.54	.60
October,	136	30	58	.38	.44
November,	126	22	54	.36	.40
December,	1250	40	277	1.82	2.10
The year,	4098	22	236	1.56	20.96

ESTIMATED MONTHLY DISCHARGE, PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY.

(Drainage area 152 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1888.					
January,	4305	99	478	3.14	3.62
February,	3284	95	620	4.08	4.40
March,	3539	152	676	4.45	5.13
April,	2750	118	470	3.09	3.45
May,	313	75	122	.80	.92
June,	147	24	53	.35	.39
July,	84	13	33	.22	.25
August,	3336	24	201	1.32	1.52
September,	5305	33	500	3.29	3.67
October,	833	69	165	1.09	1.26
November,	1344	100	338	2.22	2.47
December,	4786	80	433	2.85	3.29
The year.	5305	13	341	2.24	30.37
1889.					
January,	1553	159	436	2.87	3.31
February,	1182	82	216	1.42	1.48
March,	4235	75	395	2.60	3.00
April,	1894	62	284	1.87	2.09
May,	745	60	208	1.37	1.58
June,	2187	90	361	2.38	2.66
July,	5567	96	640	4.21	4.85
August,	1648	67	326	2.15	2.48
September,	3130	60	383	2.52	2.81
October,	3356	87	311	2.05	2.36
November,	5389	224	913	6.01	6.70
December,	616	161	298	1.96	2.26
The year,	5567	60	398	2.62	35.63
1890.					
January,	1368	129	271	1.78	2.05
February,	3699	147	774	5.09	5.30
March,	4048	165	735	4.84	5.58
April,	1246	139	355	2.34	2.61
May,	2510	117	422	2.76	3.18
June,	664	48	127	.84	0.94
July,	1018	37	142	.93	1.07
August,	803	45	146	.95	1.09
September,	876	54	178	1.17	1.30
October,	1754	55	309	2.02	2.32
November,	308	71	119	.78	0.87
December,	1006	64	149	.98	1.13
The year,	4048	37	311	2.04	27.45
1891.					
January,	3945	75	699	4.60	5.30
February,	1917	181	612	4.02	4.19
March,	4803	199	624	4.11	4.59
April,	870	103	247	1.63	1.82
May,	243	51	88	.58	0.65
June,	117	20	49	.32	0.36
July,	812	23	111	.73	.84
August,	1915	45	270	1.78	2.05
September,	2367	40	209	1.38	1.54
October,	275	31	74	.49	.56
November,	303	27	80	.53	.59
December,	1225	51	379	2.49	2.87
The year,	4803	20	287	1.89	25.36

ESTIMATED MONTHLY DISCHARGE, PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY.

(Drainage area 152 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1892.					
January,	3769	158	634	4.17	4.81
February,	217	96	160	1.05	1.13
March,	2073	145	565	3.72	4.30
April,	265	87	158	1.04	1.16
May,	1491	71	241	1.59	1.83
June,	479	41	124	.82	.92
July,	557	18	101	.66	.76
August,	571	24	100	.66	.76
September,	90	20	44	.29	.32
October,	43	4	27	.18	.21
November,	2836	26	288	1.89	2.11
December,	550	33	156	1.03	1.19
The year,	3769	4	217	1.43	19.50
1893.					
January,	1169	93	192	1.26	1.45
February,	3247	147	592	3.89	4.05
March,	3546	168	649	4.27	4.92
April,	1537	101	317	2.08	2.32
May,	5139	84	428	2.81	3.24
June,	197	37	72	.47	.52
July,	118	14	39	.26	.30
August,	1166	13	129	.85	.98
September,	978	21	84	.55	.61
October,	1939	24	114	.75	.86
November,	1470	41	250	1.64	1.83
December,	1091	98	241	1.59	1.83
The year,	5139	13	259	1.70	22.91
1894.					
January,	168	55	93	.61	0.70
February,	1284	68	355	2.34	2.44
March,	1045	126	314	2.07	2.39
April,	1119	93	233	1.53	1.71
May,	8769	36	885	5.82	6.71
June,	509	60	154	1.01	1.13
July,	571	23	77	.51	.59
August,	154	14	45	.30	.35
September,	2490	14	236	1.55	1.73
October,	2335	36	219	1.44	1.66
November,	908	70	252	1.66	1.85
December,	4132	78	374	2.46	2.84
The year,	8769	14	269	1.78	24.10
1895.					
January,	2372	80	404	2.66	3.07
February,	820	86	182	1.20	1.25
March,	1528	161	516	3.39	3.91
April,	4203	126	475	3.13	3.49
May,	348	59	129	.85	.98
June,	140	28	59	.39	.44
July,	667	21	93	.61	.70
August,	133	18	37	.24	.28
September,	38	4	23	.15	.17
October,	177	5	32	.21	.24
November,	131	18	51	.34	.38
December,	1191	25	120	.79	.91
The year,	4203	4	177	1.16	15.82

ESTIMATED MONTHLY DISCHARGE, PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY.

(Drainage area 152 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1896.					
January,	379	20	78	.51	0.59
February,	6789	52	490	3.22	3.47
March,	3150	55	504	3.32	3.83
April,	351	66	132	.87	.97
May,	300	23	61	.40	.46
June,	177	28	65	.43	.48
July,	1938	23	264	1.74	2.01
August,	123	17	40	.26	.30
September,	758	20	88	.58	.65
October,	2711	33	195	1.28	1.48
November,	2439	42	274	1.80	2.01
December,	236	36	107	.70	.81
The year,	6789	17	191	1.31	17.06
1897.					
January,	1291	38	156	1.02	1.18
February,	4083	46	429	2.82	2.94
March,	730	98	241	1.58	1.82
April,	1643	61	224	1.47	1.64
May,	4747	82	525	3.45	3.98
June,	899	35	126	.83	.93
July,	1901	29	205	1.35	1.56
August,	213	26	78	.52	.60
September,	159	8	39	.26	.29
October,	89	8	29	.19	.22
November,	3089	34	238	1.57	1.75
December,	2561	71	365	2.40	2.77
The year,	4747	8	221	1.45	19.68
1898.					
January,	2758	37	338	2.22	2.56
February,	5552	114	487	3.20	3.38
March,	899	74	206	1.36	1.57
April,	658	95	229	1.51	1.69
May,	3493	131	505	3.32	3.83
June,	113	36	57	.38	.42
July,	115	18	44	.29	.33
August,	393	24	83	.54	.62
September,	61	12	31	.20	.22
October,	475	18	78	.51	.59
November,	3808	45	419	2.76	3.08
December,	3406	70	428	2.82	3.25
The year,	5552	12	242	1.98	21.49
1899.					
January,	2693	129	472	3.11	3.59
February,	4043	120	659	4.34	4.52
March,	3525	345	869	5.72	6.60
April,	1366	78	245	1.61	1.80
May,	210	57	100	.66	.76
June,	501	26	74	.49	.55
July,	817	25	104	.68	.78
August,	1021	29	150	.99	1.14
September,	3363	43	332	2.18	2.43
October,	119	34	74	.49	.56
November,	724	53	139	.95	1.06
December,	662	43	124	.82	.94
The year,	3525	25	278	1.84	24.72

ESTIMATED MONTHLY DISCHARGE, PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY.

(Drainage area 152 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1900.					
January,	2342	30	299	1.97	2.27
February,	3606	146	741	4.87	5.07
March,	1648	118	321	2.11	2.44
April,	1212	84	178	1.17	1.31
May,	693	52	117	.77	.89
June,	63	23	47	.31	.35
July,	1505	18	127	.84	.97
August,	198	24	54	.36	.42
September,	58	14	33	.22	.25
October,	67	26	38	.25	.29
November,	222	20	50	.33	.37
December,	565	36	84	.55	.63
The year,	3606	14	174	1.14	15.26
1901.					
January,	1623	31	139	.92	1.06
February,	84	29	44	.29	.30
March,	4717	46	441	2.90	3.34
April,	2237	58	337	2.22	2.48
May,	1113	67	236	1.55	1.79
June,	547	36	119	.78	.87
July,	137	12	44	.29	.33
August,	1433	36	184	1.21	1.40
September,	250	38	87	.57	.64
October,	260	31	80	.53	.61
November,	368	36	72	.47	.52
December,	6017	51	557	3.66	4.22
The year,	6017	12	195	1.28	17.56
1902.					
January,	5259	45	353	2.32	2.68
February,	6843	45	787	5.18	5.39
March,	2840	118	665	4.38	5.05
April,	1638	86	300	1.97	2.20
May,	253	51	97	.64	.74
June,	227	45	71	.47	.52
July,	226	35	72	.47	.54
August,	324	18	68	.45	.52
September,	1684	26	164	1.08	1.20
October,	2350	71	366	2.41	2.78
November,	438	46	123	.81	.90
December,	5011	172	850	5.59	6.44
The year,	6843	18	326	2.15	28.96
1903.					
January,	3840	166	551	3.62	4.17
February,	6181	207	676	4.37	4.55
March,	2778	168	471	3.10	3.57
April,	2126	128	526	3.45	3.85
May,	128	38	77	.51	.59
June,	1668	45	268	1.76	1.96
July,	2055	36	258	1.70	1.96
August,	976	46	118	.78	.90
September,	300	29	75	.49	.55
October,	4236	36	372	2.44	2.81
November,	349	54	82	.54	.60
December,	2813	53	260	1.71	1.97
The year,	6181	29	311	2.08	27.49

ESTIMATED MONTHLY DISCHARGE, PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY.

(Drainage area 152 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1904.					
January,	4465	54	371	2.44	2.81
February,	3815	55	334	2.20	2.37
March,	3581	128	538	3.54	4.08
April,	1763	59	236	1.55	1.73
May,	1117	35	100	.66	.76
June,	2583	40	259	1.70	1.90
July,	333	38	90	.59	.68
August,	1885	44	272	1.79	2.06
September,	5460	33	313	2.06	2.30
October,	3821	46	241	1.59	1.83
November,	634	51	179	1.18	1.32
December,	1006	66	163	1.07	1.23
The year,	5460	33	258	1.70	23.07
1905.					
January,	5708	117	440	2.89	3.33
February,	332	128	203	1.34	1.40
March,	3019	123	877	5.77	6.65
April,	814	78	191	1.26	1.41
May,	110	26	72	0.471	0.543
June,	81	32	47	0.307	0.343
July,	58	19	37	0.244	0.281
August,	3241	29	268	1.76	2.03
September,	1937	58	299	1.97	2.20
October,	1063	43	174	1.14	1.31
November,	3156	43	188	1.24	1.38
December,	1654	66	315	2.07	2.39
The year,	5708	19	259	1.71	26.35
1906.					
January,	1510	138	317	2.09	2.41
February,	2170	86	311	2.05	2.14
March,	4050	118	555	3.65	4.21
April,	3030	118	480	3.16	3.53
May,	1860	45	198	1.30	1.50
June,	2200	48	216	1.42	1.58
July,	422	39	84	.55	.64
August,	1690	29	170	1.12	1.29
September,	292	26	50	.33	.37
October,	509	34	116	.76	.88
November,	778	29	131	.86	.96
December,	3360	45	287	1.89	2.18
The year,	4050	26	243	1.60	21.69
1907.					
January,	1770	128	454	2.99	3.45
February,	150	84	125	.82	.86
March,	3450	92	627	4.12	4.75
April,	1010	92	179	1.18	1.32
May,	280	37	124	.82	.94
June,	1140	46	142	.93	1.04
July,	219	31	85	.56	.64
August,	274	26	63	.41	.48
September,	4850	30	552	3.63	4.05
October,	1380	72	264	1.74	2.01
November,	3110	158	590	3.88	4.33
December,	2820	179	551	3.62	4.17
The year,	4850	26	313	2.06	28.04

ESTIMATED MONTHLY DISCHARGE, PERKIOMEN CREEK, AT FREDERICK, (SPRING MOUNT), MONTGOMERY COUNTY.

(Drainage area 152 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1908.					
January,	2250	158	373	2.45	2.82
February,	5570	138	668	4.39	4.74
March,	2260	179	433	2.85	3.29
April,	338	114	180	1.18	1.32
May,	1990	110	383	2.52	2.90
June,	421	34	82	.54	.60
July,	1350	41	144	.95	1.09
August,	102	29	52	.34	.39
September,	106	10	24	.16	.18
October,	226	27	57	.38	.43
November,	63	27	42	.28	.31
December,	236	33	82	.54	.62
The year,	5570	10	210	1.38	18.69
1909.					
January,	2030	49	249	1.64	1.89
February,	3370	52	563	3.70	3.85
March,	1070	112	347	2.28	2.63
April,	998	88	332	2.18	2.43
May,	704	77	220	1.45	1.67
June,	186	43	80	.53	.59
July,	69	21	36	.24	.27
August,	38	10	23	.15	.18
September,	50	10	23	.15	.17
October,	50	10	26	.17	.20
November,	82	18	35	.23	.26
December,	3180	23	208	1.37	1.58
The year,	3370	10	179	1.17	15.72
1910.					
January,	4591	56	417	2.74	3.16
February,	3454	68	565	3.72	3.87
March,	2499	49	309	2.03	2.34
April,	1667	46	270	1.78	1.98
May,	248	67	116	.76	.88
June,	975	39	180	1.18	1.32
July,	55	6	29	.19	.22
August,	462	17	81	.53	.61
September,	264	16	67	.44	.49
October,	67	15	30	.20	.23
November,	967	17	123	.81	.90
December,	648	42	118	.78	.90
The year,	4591	6	192	1.26	16.90
1911.					
January,	1744	89	290	1.91	2.20
February,	587	108	223	1.47	1.53
March,	1294	105	265	1.74	2.01
April,	1552	112	300	1.97	2.20
May,	240	36	75	.49	.56
June,	1072	50	178	1.17	1.30
July,	1169	25	111	.73	.84
August,	2087	36	119	.78	.90
September,	1066	34	126	.83	.93
October,	2051	72	331	2.18	2.51
November,	2129	78	356	2.34	2.61
December,	1026	108	285	1.87	2.16
The year,	2129	25	222	1.45	19.75

DELAWARE BASIN—STATION NO. 19

WISSAHICKON CREEK AT PHILADELPHIA.

Wissahickon creek, a tributary of the Schuylkill river, rises near Lansdale, Montgomery County, and flows in a general southerly direction to its mouth in the Schuylkill at Wissahickon, near Philadelphia, opposite the Montgomery-Philadelphia County line. Its length is approximately 22 miles and through the upper portion the creek flows through a wide valley which is highly cultivated, but near the mouth it cuts through a gorge about 200 feet deep, the banks of which are wooded and steep. The creek drains a densely populated area lying between Perkiomen and Little Neshaminy creeks of approximately 65 square miles, and has a fall of 420 feet from its source to the mouth, an average of 21 feet per mile. From Chestnut Hill to the mouth, a distance of 6 miles, the creek falls 100 feet, or about 17 feet per mile. The annual precipitation over this watershed is from 40 to 45 inches.

Measurements of the flow were begun in April, 1897, under the direction of Mr. John E. Codman, of the Philadelphia Bureau of Water. Current meter measurements were made about 100 yards above the mouth, and the section rated, the data being subsequently compared with the computed discharge over a stone dam, which was then used as a weir for measurement of discharge. In August, 1897, an automatic recording gage was established. Results have been computed from 1897 to July 31, 1906, at which time the gaging station was discontinued, but the data are not continuous, as during this period readings were temporarily discontinued from time to time.

The following data have been furnished by the United States Geological Survey and the Philadelphia Bureau of Water.

DAILY DISCHARGE, IN SECOND FEET, OF WISSAHICKON CREEK, AT PHILADELPHIA, PHILADELPHIA COUNTY, PA.

1897.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	----------	84	62	162	76	41	68	65
2,	----------	87	72	148	102	25	432	65
3,	----------	74	63	139	74	24	132	65
4,	----------	137	60	131	55	29	77	74
5,	91	168	56	134	59	32	65	276
6,	83	117	56	128	67	30	46	136
7,	75	75	53	120	67	29	45	86
8,	71	132	57	108	53	29	48	75
9,	71	1384	32	119	52	28	54	75
10,	73	228	32	117	52	27	75	75
11,	74	152	32	160	36	26	57	75
12,	77	141	54	110	49	32	53	93
13,	345	131	50	101	68	33	45	93
14,	182	121	59	90	35	30	35	296
15,	140	105	43	550	32	29	39	833
16.	117	112	51	497	32	28	28	162
17,	98	103	41	158	35	24	32	133
18,	86	111	36	108	35	24	34	111
19.	84	97	90	97	35	24	40	103
20,	79	100	64	93	35	25	35	98
21,	77	103	96	82	30	26	33	94
22,	99	88	2817	79	29	31	39	105
23,	91	84	187	88	31	30	42	94
24,	85	81	268	388	41	28	40	84
25,	204	74	139	142	33	74	80	80
26,	89	73	121	97	34	89	51	73
27,	77	70	131	91	33	39	211	75
28,	72	68	763	85	36	30	98	75
29,	69	67	336	78	49	29	68	77
30,	110	67	223	80	45	29	65	82
31,	216	----------	184	79	----------	27	----------	111

DAILY DISCHARGE, IN SECOND-FEET, OF WISSAHICKON CREEK, AT PHILADELPHIA, PHILADELPHIA COUNTY, PA.

1898.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	118	113	118	143	98	94	44	29	24	19	46	129
2,	91	110	115	110	89	93	34	30	24	19	29	107
3,	80	113	119	101	73	86	35	68	24	18	24	103
4,	74	118	115	93	77	84	35	79	24	18	26	354
5,	70	116	110	101	79	80	34	164	23	19	24	923
6,	71	108	110	101	79	79	34	108	23	18	23	182
7,	75	98	110	101	111	79	34	64	23	16	27	142
8,	71	93	103	100	744	77	33	64	22	17	33	125
9,	64	93	94	91	256	79	32	66	20	17	29	110
10,	68	93	93	87	136	78	32	84	22	16	170	101
11,	67	104	96	87	125	74	31	158	22	15	248	93
12,	97	146	96	87	125	70	30	125	20	17	82	93
13	136	143	91	87	235	68	30	118	21	19	63	93
14,	105	108	91	93	118	68	29	83	21	21	65	93
15,	215	108	87	93	281	60	29	76	20	24	75	86
16,	177	96	84	87	242	64	30	79	21	25	70	80
17,	105	93	86	79	323	70	28	108	21	18	79	79
18,	78	93	84	75	139	66	26	416	20	20	125	75
19,	75	120	82	75	131	61	28	859	19	29	918	84
20,	132	1512	79	79	155	62	30	123	19	28	176	294
21,	223	338	89	79	230	61	32	65	19	37	104	143
22,	134	210	101	75	125	55	64	55	19	61	89	129
23,	751	158	105	75	110	55	64	44	28	35	140	531
24,	193	140	113	108	128	55	32	40	33	26	141	166
25,	140	133	113	122	128	54	30	55	25	22	118	122
26.	205	130	93	107	146	54	48	42	25	47	118	115
27,	201	128	84	98	116	46	243	42	26	70	100	98
28,	128	124	104	225	113	125	79	26	21	60	100	80
29,	125	----------	157	235	107	79	50	27	20	44	168	84
30,	118	----------	357	107	107	60	34	70	19	31	129	101
31,	113	----------	138	----------	100	----------	31	67	----------	48	----------	143

DAILY DISCHARGE, IN SECOND FEET, OF WISSAHICKON CREEK, AT PHILADELPHIA, PHILADELPHIA COUNTY, PA.

1899.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	141	119	285	191	89	45
2,	106	106	245	175	96	42
3,	106	110	233	175	103	42
4,	120	204	236	173	93	33
5,	412	204	1059	159	80	21
6,	574	113	365	151	80	----------
7,	573	113	241	166	87	----------
8,	220	113	204	451	87	----------
9,	194	113	186	205	75	----------
10,	154	113	198	152	75	----------
11.	140	113	198	140	105	----------
12,	132	113	198	140	108	----------
13.	118	113	540	140	90	----------
14,	144	113	208	137	87	----------
15,	149	113	346	129	87	----------
16,	140	113	359	142	87	----------
17,	232	149	186	142	87	----------
18,	147	227	273	129	96	----------
19,	118	350	603	129	90	----------
20,	116	466	340	123	73	----------
21,	115	436	202	115	68	----------
22,	106	779	521	106	75	----------
23.	106	630	328	106	96	----------
24,	259	359	232	106	96	----------
25,	925	250	202	106	75	----------
26,	184	245	216	106	64	----------
27,	142	1285	198	106	64	----------
28,	133	423	434	101	54	----------
29,	136	----------	813	98	50	----------
30,	136	----------	260	95	59	----------
31,	136	----------	218	----------	54	----------

DAILY DISCHARGE, IN SECOND FEET, OF WISSAHICKON CREEK, AT PHILADELPHIA, PHILADELPHIA COUNTY, PA.

1900.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	15	47	16	64	18	22
2,	17	24	15	40	17	24
3,	20	20	15	17	15	24
4,	17	16	18	15	15	247
5,	17	16	15	14	17	219
6,	17	17	13	14	18	47
7,	17	20	10	12	14	31
8,	20	17	9	27	14	38
9,	17	17	8	54	16	38
10,	17	15	13	47	15	38
11,	16	12	13	23	10	52
12,	40	98	9	15	15	62
13,	54	31	8	16	18	41
14,	32	31	9	274	14	24
15,	15	24	12	92	13	31
16,	13	18	278	54	11	30
17,	15	18	85	35	11	26
18,	13	59	39	25	11	24
19,	9	152	17	19	12	22
20,	10	80	17	19	14	21
21,	18	43	14	21	13	21
22,	21	27	14	21	12	21
23,	114	22	12	21	11	21
24,	114	26	13	20	10	21
25,	19	31	13	17	11	21
26,	116	22	10	17	367	20
27,	83	47	10	14	86	20
28,	26	40	13	12	26	20
29,	17	40	13	15	20	20
30,	176	32	37	17	25	20
31,	219	27	----------	15	----------	20

DAILY DISCHARGE, IN SECOND FEET, OF WISSAHICKON CREEK, AT PHILADELPHIA, PHILADELPHIA COUNTY, PA.

1901.	JAN.	FEB.	MAR.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	106	27	24	20	99	39	16	17
2,	85	27	17	20	99	39	16	19
3,	102	27	17	20	20	42	16	82
4,	81	47	17	19	24	38	16	151
5,	22	64	17	20	31	33	15	26
6,	22	64	19	20	26	33	14	20
7,	20	47	19	271	21	33	13	19
8,	19	47	17	102	22	29	14	18
9,	19	42	19	80	27	23	15	17
10,	12	20		42	26	29	14	18
11,	18	20		47	38	34	14	20
12,	19	20		31	43	34	14	20
13,	224	26		261	31	34	13	18
14,	240	27		261	31	47	13	18
15,	68	22		27	31	48	15	41
16,	87	43		22	30	29	15	59
17,	80	64		27	30	23	15	38
18,	52	64		355	27	27	14	22
19,	31	64		398	24	31	14	21
20,	31	64		244	28	31	14	23
21,	31	64		113	28	35	14	24
22,	31	47		81	27	42	15	22
23,	31	26		81	24	42	18	21
24,	31	19		1095	27	31	515	20
25,	31	16		327	27	20	141	21
26,	31	27		131	23	17	62	81
27,	31	30		21	24	16	18	486
28,	31	22		21	24	16	18	77
29,	31			37	24	17	16	1269
30,	27			43	32	16	16	1188
31,	22			27		17		250

DAILY DISCHARGE, IN SECOND FEET, OF WISSAHICKON CREEK, AT PHILADELPHIA, PHILADELPHIA COUNTY, PA.

1902.	JAN.	FEB.	MAR.	APRIL.	MAY.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	163	22	1967	114	123	82	110
2,	153	146	870	106	96	73	120
3,	112	162	485	102	96	68	338
4,	99	138	198	102	106	68	135
5,	93	49	104	106	96	68	140
6.	77	22	119	106	82	80	149
7,	63	22	148	106	77	101	111
8,	45	22	184	490	77	85	103
9,	42	22	247	415	77	64	96
10	44	22	267	183	77	66	87
11,	32	22	255	161	82	68	96
12,	31	22	255	157	86	66	120
13,	31	22	247	140	82	64	130
14,	31	22	227	123	70	75	84
15,	31	22	195	106	63	66	108
16,	31	22	168	106	61	45	2495
17,	27	22	155	114	51	45	675
18.	22	22	118	114	44	38	253
19,	22	22	104	106	44	27	206
20,	22	22	143	106	47	27	186
21,	151	22	161	98	47	31	362
22,	1093	398	148	91	a40	31	1032
23,	101	557	140	91	----------	26	320
24,	84	270	141	89	----------	33	202
25,	68	334	141	84	----------	84	162
26,	77	1511	131	82	----------	140	150
27,	171	1821	123	72	----------	132	177
28,	124	1983	124	72	----------	96	166
29,	26	----------	127	111	----------	71	133
30,	25	----------	207	168	----------	71	133
31.	24	----------	128	----------	----------	----------	137

a Water drained out of pond for repairs May 22.

DAILY DISCHARGE, IN SECOND-FEET, OF WISSAHICKON CREEK, AT PHILADELPHIA PHILADELPHIA COUNTY, PA.

1903.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	128	140	340	193	140	73	56	10	20	12
2,	140	137	211	168	132	68	46	10	19	14
3,	1241	130	188	158	123	56	92	18	17	14
4,	269	510	174	248	132	46	113	28	17	11
5,	184	337	168	215	140	54	66	49	28	13
6,	198	122	164	157	132	64	35	48	50	----------
7,	185	150	160	211	123	64	45	44	47	----------
8,	142	192	214	386	114	75	41	44	24	----------
9,	137	191	275	590	106	71	19	32	18	----------
10,	140	136	250	204	106	55	19	32	20	----------
11,	218	197	209	182	106	59	18	23	19	----------
12,	233	227	193	193	106	59	18	24	18	----------
13,	98	159	182	193	106	59	87	24	16	----------
14,	125	150	166	751	106	64	95	34	15	----------
15,	111	184	157	833	106	64	54	52	15	----------
16,	115	289	152	434	103	70	19	38	30	----------
17,	118	258	147	300	99	66	16	20	66	----------
18,	118	137	147	255	103	45	374	14	66	----------
19,	108	132	135	230	94	45	296	17	24	----------
20,	103	135	128	216	84	110	103	17	18	----------
21,	820	123	166	200	87	140	87	16	15	----------
22,	214	123	347	182	80	85	105	15	16	----------
23,	214	123	554	166	73	64	114	13	16	----------
24,	158	133	340	158	73	75	85	13	15	----------
25,	114	148	202	158	73	75	54	16	15	----------
26,	113	164	174	156	73	57	33	16	15	----------
27,	115	161	168	156	68	49	20	15	27	----------
28,	716	1108	162	149	64	47	15	53	22	----------
29,	303	----------	157	140	78	77	12	68	17	----------
30,	158	----------	208	140	87	85	10	35	14	----------
31,	144	----------	425	----------	78	----------	10	22	----------	----------

DAILY DISCHARGE, IN SECOND-FEET, OF WISSAHICKON CREEK, AT PHILADELPHIA, PHILADELPHIA COUNTY, PA.

1905.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	123	20	157	166	106	18	10	10	18	3	16	238
2,	143	20	135	162	106	34	37	10	30	3	15	37
3,	135	20	131	166	98	30	41	12	165	4	11	253
4,	114	20	131	277	98	20	14	17	376	4	10	261
5,	109	20	127	323	89	19	13	404	342	4	12	133
6,	148	20	123	392	114	25	11	716	125	4	19	80
7,	1746	20	123	240	111	40	7	492	21	3	16	44
8,	247	18	208	204	101	29	8	143	20	3	18	77
9,	166	61	654	188	96	21	8	7	18	4	17	124
10,	159	63	1011	188	63	19	7	11	18	4	10	165
11,	148	20	504	193	63	16	8	37	86	98	12	137
12,	266	20	365	208	64	33	10	200	246	156	9	62
13	277	20	265	208	63	26	23	366	110	35	10	41
14,	145	20	285	177	63	19	16	241	24	6	16	35
15,	131	20	263	157	96	16	10	355	19	5	11	25
16,	126	30	308	150	97	13	8	372	20	8	10	20
17,	112	20	350	141	126	13	4	186	20	8	14	18
18,	109	20	381	140	112	11	2	76	21	3	12	19
19,	109	20	434	137	86	14	2	28	16	10	6	20
20,	109	42	479	128	52	16	7	28	10	479	9	21
21,	106	47	850	128	29	10	7	28	12	258	11	764
22,	106	47	450	137	41	12	3	28	11	103	14	347
23,	106	63	295	131	41	16	7	28	6	37	13	237
24,	106	68	270	119	22	14	9	28	4	26	12	216
25,	75	85	468	116	19	9	8	202	4	82	23	195
26	38	175	278	111	16	11	8	219	3	41	13	178
27,	31	206	242	120	16	14	8	47	3	30	12	164
28,	28	171	216	134	28	11	8	15	3	18	21	159
29,	28		183	128	25	10	10	17	3	13	367	335
30,	31		175	114	31	9	10	13	3	16	397	260
31,	25		175		21		9	14		16		204

DAILY DISCHARGE, IN SECOND FEET, OF WISSAHICKON CREEK, AT PHILADELPHIA, PHILADELPHIA COUNTY, PA.

1906.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	64	42	42	158	68	55	47
2,	54	34	32	173	62	17	19
3,	92	26	1010	102	57	9	19
4,	438	22	1122	96	52	7	888
5,	215	22	206	102	49	7	219
6,	132	22	92	99	49	10	73
7,	111	22	142	91	47	13	73
8,	105	35	142	91	45	14	64
9,	82	69	132	629	45	17	47
10,	68	94	121	598	45	17	47
11,	64	96	115	198	42	10	47
12,	102	96	104	166	38	7	24
13,	128	188	95	140	35	8	16
14,	152	387	94	115	32	6	15
15,	161	418	94	476	30	3	16
16,	137	128	91	205	28	229	19
17,	128	90	80	140	28	236	206
18,	111	73	78	132	22	848	192
19,	103	57	87	123	22	1096	42
20,	98	53	105	118	22	214	19
21,	101	102	114	113	23	149	70
22,	106	289	103	110	----------	158	115
23,	90	90	95	111	23	219	59
24,	68	90	89	96	23	324	23
25,	64	140	100	91	23	140	13
26,	53	222	136	84	25	105	12
27,	39	88	500	80	23	70	50
28,	106	57	335	78	64	59	48
29,	144	----------	156	75	149	55	57
30,	81	----------	130	73	23	64	106
31,	47	----------	185	----------	55	----------	85

Note.—Dam drained out and observations discontinued after July.

ESTIMATED MONTHLY DISCHARGE, WISSAHICKON CREEK, AT PHILADELPHIA, PHILADELPHIA COUNTY.

(Drainage area 65 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1897.					
May,	345	69	95	1.47	1.70
June,	1384	67	148	2.28	2.54
July,	2817	32	204	3.16	3.64
August,	550	78	147	2.27	2.62
September,	102	29	47	0.73	0.81
October,	89	24	32	0.50	0.58
November,	432	28	71	1.09	1.22
December,	833	65	127	1.96	2.26
1898.					
January,	751	64	139	2.15	2.48
February,	1512	92	176	2.73	2.84
March,	357	78	110	1.70	1.96
April,	235	75	103	1.60	1.78
May,	744	73	162	2.51	2.89
June,	125	46	71	1.10	1.23
July,	243	26	43	0.67	0.77
August,	858	26	111	1.72	1.98
September,	33	19	22	0.35	0.39
October,	70	15	28	0.44	0.51
November,	918	23	118	1.83	2.04
December,	923	75	163	2.52	2.90
The year,	1512	15	104	1.61	21.77
1899.					
January,	925	106	207	3.18	3.67
February,	1285	106	271	4.17	4.34
March,	1059	186	326	5.02	5.79
April,	451	95	146	2.25	2.51
May,	108	50	81	1.25	1.44
1900.					
July,	219	9	42	0.65	.75
August,	152	12	35	0.54	.62
September,	278	8	26	0.40	.46
October,	274	12	34	0.53	.61
November,	367	10	29	0.45	.52
December,	247	20	42	0.65	.75
a 1901.					
January,	240	12	54	0.83	.96
February,	64	16	38	0.58	.60
August,	1095	19	138	2.12	2.44
September,	99	20	32	.49	.55
October,	48	16	30	.46	.53
November,	515	13	37	.57	.64
December,	1269	17	133	2.05	2.36
b 1902.					
January,	1093	22	100	1.54	1.78
February,	1983	22	277	4.26	4.44
March,	1967	104	259	3.98	4.59
April,	490	72	134	2.06	2.30
November,	140	26	66	1.03	1.13
December,	2495	84	281	4.32	4.98

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a Mar.-July, inc., station discontinued.
b May-October, inc., station discontinued.

ESTIMATED MONTHLY DISCHARGE, WISSAHICKON CREEK, AT PHILADELPHIA, PHILADELPHIA COUNTY.

(Drainage area 65 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a 1903.					
January,	1241	98	232	3.57	4.12
February,	1103	122	214	3.30	3.44
March,	554	128	215	3.31	3.82
April,	833	140	257	3.95	4.41
May,	140	64	100	1.54	1.78
June,	140	45	67	1.03	1.15
July,	374	10	70	1.08	1.24
August,	68	10	27	.42	.48
September,	66	14	24	.37	.41
1905.					
January,	1746	25	171	2.65	3.05
February,	206	18	49	.76	.79
March,	1011	123	325	5.03	5.80
April,	392	111	173	2.68	2.99
May,	126	16	68	1.05	1.21
June,	40	9	14	.22	[illegible]
July,	41	2	11	.17	.19
August,	716	7	141	2.18	2.51
September,	[illegible]	3	59	.91	1.02
October,	479	3	47	.72	.84
November,	397	6	38	5.93	.66
December,	764	18	157	2.43	2.80
The year,	1746	2	94	1.46	22.19
b 1906.					
January,	438	39	111	1.72	1.98
February,	418	22	109	1.69	1.76
March,	1120	32	94	1.46	1.68
April,	629	73	162	2.51	2.80
May,	149	22	45	0.70	.80
June,	1100	3	139	2.15	2.40
July,	888	12	88	1.36	1.57

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a Station discontinued Oct. 5, 1903.
b Dam drained out and observations discontinued after July, 1906.

DELAWARE BASIN—STATION NO. 20.

SCHUYLKILL RIVER AT PHILADELPHIA, PA.

Schuylkill river rises in the central part of Schuylkill County, Pa., in two branches, which join at Schuylkill Haven, flows southeastward, and unites with the Delaware river at Philadelphia. Its length to the forks is about 113 miles, and its drainage area measures about 1,920 square miles. The headwaters of the river lie in a mountainous, coal bearing region, but 25 or 30 miles below its source it enters a more highly cultivated country and the slope becomes more gentle. There are few natural lakes in the basin, but numerous reservoirs have been constructed for the benefit of navigation and water supply. The low water flow is augmented by mine drainage. Severe floods have been frequent, the greatest in recent years being that of March 1902. The Schuylkill is navigable for ocean-going vessels only as far as Fairmount, 8.4 miles from its mouth, where the first dam is built across the river, while above that point it is navigable for river barges as far as Port Clinton, 98 miles above its mouth. The elevation of the river at the forks is 550 feet, and at the mouth 0. A part of the water supply for the City of Philadelphia comes from the Schuylkill, while many other towns and cities use the river and its tributaries. The river receives a large amount of pollution from various sources, including a vast amount of culm from the coal mines. The average yearly rainfall over this watershed varies considerably, ranging between 40 and 55 inches, the upper portion of the watershed receiving the heaviest precipitation in the State.

Records of the height of the river at Fairmount Pool have been kept for many years, but not in such form as to be useful for the computation of daily discharges. Since 1903, however, daily discharges have been computed. The station is located at the Fairmount dam, Philadelphia. The computed daily discharges represent the total flow of the river as determined from the amount wasted over the flashboards at the Fairmount dam, the pumpage from the river, the leakage, and the quantity used for power at Fairmount.

The following data have been furnished by the United States Geological Survey, and the Philadelphia Bureau of Water.

DAILY DISCHARGE, IN SECOND-FEET, OF SCHUYLKILL RIVER, AT PHILADELPHIA, PHILADELPHIA COUNTY, PA.

1903.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	2278	4629	29874	5440	2693	1445	4062	5195	2880	1346	1260	1416
2,	4520	4229	16114	4560	2532	1445	2708	4458	2208	1346	1260	1416
3,	18230	4011	10374	4220	2386	1445	2242	2191	1604	1346	1260	1416
4,	12570	12789	8314	5662	2242	1445	4922	1498	1274	1346	1260	1416
5,	9800	14229	7044	3810	2242	1445	2512	2053	1274	1346	1260	1416
6,	8340	9289	6244	4320	2242	1445	1728	2923	1604	1346	1260	1416
7,	7200	7809	5814	3998	2112	1445	1362	2411	1182	1346	1260	1416
8,	6030	7289	5394	6580	2312	1445	1362	2411	1182	1656	1260	1416
9,	5060	6889	6784	13920	1816	1445	1362	1751	1182	17806	1260	1416
10,	4410	6059	7304	10660	1816	1445	1362	1385	1182	29986	1260	1416
11.	3683	5181	6914	8100	1766	1445	1362	1385	1182	16056	1260	1416
12,	4852	7959	6544	6980	1506	7725	1362	1385	1182	11166	1260	1416
13	7890	8559	5582	6850	1506	3239	1362	1385	1182	7476	1260	2762
14,	2630	6889	5144	10180	1506	2113	1362	1385	1182	5156	1260	4976
15,	3308	6639	4494	19520	1506	1987	1362	1385	1182	4256	1260	2603
16,	4010	8559	4062	15300	1506	1705	1362	1385	1182	3419	1260	1508
17,	4310	8849	4062	11340	1506	1445	1362	1385	1182	3044	1260	1416
18,	4310	6789	3984	8540	1506	1445	3846	1385	1442	3419	1626	1416
19,	3498	5279	3766	7110	1506	1445	11182	1385	1442	3746	1738	1416
20,	2630	4954	3657	6480	1506	1924	5042	1385	1182	2692	1260	7996
21,	16480	4739	3657	5818	1506	4355	5782	1385	1182	2372	1260	14656
22,	10120	4307	5264	5080	1506	3923	3052	1385	1182	1952	1260	5714
23,	5908	4307	14644	4320	1506	2471	2098	1385	1182	1952	1260	3489
24,	3683	4307	24364	4220	1506	3923	1580	1385	1182	1952	1260	3489
25,	2797	4307	19774	4220	1506	2143	1420	1385	1182	1712	1260	2954
26.	2564	4307	11584	4070	1506	2181	1362	1385	1182	1438	1260	3100
27,	2490	4307	8314	3920	1506	1663	1362	1385	1182	1438	1260	1634
28,	7740	25019	6644	3408	1506	1477	1362	1385	1182	1438	1260	1516
29,	8910		5582	2955	1506	1621	1362	4945	1182	1438	1260	1416
30,	6810		5394	1866	1506	2714	1728	3567	1182	1346	1260	1416
31,	6030		6004		1506		9552	3075		1346		1416

DAILY DISCHARGE, IN SECOND-FEET, OF SCHUYLKILL RIVER, AT PHILADELPHIA, PHILADELPHIA COUNTY, PA.

1904.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	1303	1445	9045	6469	1292	7092	771	1595	994	1360	1495	1258
2,	1303	1445	8934	12470	1292	4294	771	1595	994	1360	1495	1258
3,	1303	1445	6429	8434	1292	5048	771	1595	994	1360	1495	1258
4,	1303	1445	8850	5634	1292	4453	771	1607	994	1360	1495	1258
5,	1303	1445	5129	6572	1292	2991	771	1595	994	1360	1495	1258
6,	1303	1445	3092	3391	1292	4138	771	1595	994	1360	1495	1258
7,	1303	2439	11860	3120	1292	12850	771	1595	994	1360	1495	1258
8,	1303	6187	36180	3120	1292	4136	871	1595	994	1360	1495	1258
9,	1303	3187	14320	3484	1292	3270	803	1595	994	1360	1495	1258
10,	1303	2024	7539	4003	1292	3002	771	1595	994	1360	1495	1258
11,	1303	1445	5239	3391	1292	3630	771	5339	994	1360	1495	1258
12,	1303	1445	3994	2887	1292	2743	771	3500	994	4002	1495	1258
13	1426	1445	4084	2453	1292	1818	771	1595	994	1873	1535	1258
14,	2910	1445	2755	2034	1292	1730	771	2568	5456	1483	5173	1258
15,	3215	1445	2498	2034	1292	1729	771	3137	29490	1360	5264	1258
16,	2064	1445	2426	1866	1292	1729	771	1673	4044	1360	3678	1258
17,	1303	1445	2483	1774	1292	1729	771	1595	994	1360	2930	1258
18,	1303	1445	3675	1774	1292	1729	771	1595	994	1360	1857	1258
19,	1303	1445	6135	1774	1292	1729	771	1595	994	1360	2454	1258
20,	1303	1445	5925	1774	1292	1729	771	3354	994	1360	2375	1258
21,	1303	1445	4756	1774	1292	1729	771	3981	994	11350	2375	1258
22,	3938	22810	4475	1774	1292	1729	771	3034	994	10780	2211	1258
23	27210	21420	4650	1774	1292	1729	771	3679	994	4927	1822	1258
24,	14050	6537	3963	1774	1292	1729	771	3506	994	2909	1671	1258
25,	7003	5058	3397	1774	1292	1729	771	1758	994	1961	1642	1258
26	3753	4591	3585	1774	1292	1501	771	1595	994	1419	1495	1258
27,	5369	2558	3945	1774	1292	1325	771	1595	994	1360	1495	1258
28,	1946	2654	3585	1774	1432	1325	803	1595	994	1360	1495	3531
29,	1433	4474	3061	2034	1292	1325	771	1595	994	1360	1495	4200
30,	1303		2691	1866	1292	1325	771	1595	994	1360	1495	3063
31,	1303		3112		5997		771	1595		1360		3045

DAILY DISCHARGE, IN SECOND-FEET, OF SCHUYLKILL RIVER, AT PHILADELPHIA, PHILADELPHIA COUNTY, PA.

1905.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	2537	1540	2328	5115	1466	813	595	1332	1542	1327	755	4443
2.	2980	1540	1880	4660	1454	813	595	1332	1542	1327	755	2906
3,	3236	1540	1720	4447	1340	813	595	1332	1825	1327	755	4371
4,	2983	1540	1896	4342	1340	813	595	1332	3724	1327	755	10390
5,	1958	1540	1850	5787	1492	813	595	1332	8125	1327	755	7165
6,	2957	1540	2090	7427	1340	813	595	1332	4620	1327	755	4314
7,	30190	1540	2199	6537	1340	813	595	1452	2455	1327	755	3051
8,	20450	1540	2541	5067	1340	813	595	1424	1828	1327	755	2570
9	9071	1540	6965	4617	1340	813	595	1332	1554	1327	755	2296
10,	6500	1540	13260	4242	1340	813	595	1332	1542	1327	755	2168
11,	5279	1540	13780	4355	1340	813	595	1332	1542	1327	755	1975
12,	5680	1540	10270	4890	1340	813	595	1444	2068	2796	755	1949
13	6430	1540	8210	4410	1340	813	595	1975	3498	3472	755	1949
14,	5583	1632	8140	3628	1340	813	595	1332	2187	1500	755	1781
15,	3766	1572	7652	3530	1340	813	595	1965	1854	1327	755	1689
16,	3910	1540	8290	3355	1340	813	595	6006	1709	1327	755	1689
17,	2439	1540	9973	3084	1340	813	595	2882	1627	1327	755	1689
18,	2872	1540	12780	2755	1340	813	595	1348	1693	1327	755	1689
19,	2696	1540	15560	2447	1340	813	595	1332	1992	1327	755	1689
20,	2536	1540	17380	2313	1340	813	595	1332	1656	3103	755	1689
21,	2376	1540	23160	2458	1340	813	595	1332	1667	5992	755	4995
22,	2464	1540	21040	2668	1340	813	595	1332	1542	3450	755	5993
23.	1958	1540	14860	2595	1340	813	595	1332	1542	2368	755	3601
24,	1720	1540	10500	2322	1340	813	595	1332	1542	1825	755	2875
25,	1545	1540	13810	1970	1340	813	595	2937	1542	1457	755	2570
26	1350	1785	14800	1913	1340	813	595	6572	1542	1503	755	2240
27,	1350	2276	11940	2008	1340	813	595	2688	1542	1420	755	1918
28,	1368	2276	9625	2166	1340	813	595	1508	1542	1327	755	1959
29.	1993		8025	2011	1340	813	595	1332	1542	1327	5825	2248
30.	2324		6775	1902	1340	813	595	1332	1542	1327	7730	2642
31,	1372		5885		1340		595	1332		1327		2432

DAILY DISCHARGE, IN SECOND-FEET, OF SCHUYLKILL RIVER, AT PHILADELPHIA, PHILADELPHIA COUNTY, PA.

1906.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	2143	2106	2549	5445	1548	1394	1216	1204	727	1257	1347	1422
2,	1887	1955	2440	4328	1580	1352	1166	1204	727	1257	1347	1422
3,	1693	1715	5991	3758	1580	1352	1256	2281	727	1257	1347	1422
4,	7811	1627	27025	3229	1580	1260	5489	10084	727	1257	1347	1422
5,	6601	1719	16857	2957	1580	1260	2152	4172	727	4259	1347	1422
6,	4096	1627	8952	2828	1580	1260	1337	1507	727	2382	1347	1422
7,	3515	1627	5621	2739	1420	1260	1166	1204	727	1257	1347	1422
8,	3043	1627	4753	2566	1420	1260	1166	1204	727	1257	1347	1422
9,	2642	1627	4186	2853	1420	1260	1105	1204	727	1257	1347	1422
10,	2180	1803	3590	16203	1324	1260	1072	1204	727	1257	1347	1422
11,	1942	1803	3220	7836	1324	1260	1072	1204	727	1257	1347	1422
12,	2325	1627	2835	6271	1324	1260	1072	1204	727	1257	1347	1422
13	2868	1811	2704	4590	1324	1260	1072	1204	1206	1257	1347	1422
14,	2787	2710	2544	3729	1324	1260	1072	1204	987	1257	1347	1422
15,	2627	3604	2544	10170	1324	1260	1072	1204	755	1257	1347	1422
16,	3569	2501	2544	15734	1324	1778	1096	1204	727	1257	1347	1422
17,	4000	1813	2477	15224	1324	2427	1181	1204	727	1257	1347	2150
18,	3139	1719	2177	6055	1324	3034	1181	1204	727	1257	1439	3117
19,	2563	1627	2177	4294	1324	19978	1072	1204	727	1257	2505	1662
20,	2272	1761	2137	3423	1324	7525	1072	1204	727	1257	1607	1422
21,	2207	3167	2097	2925	1324	4279	1072	1296	727	3165	1354	2864
22,	2207	16053	2097	2740	1324	4279	1095	1296	727	2531	1347	2944
23,	2207	10279	1957	2536	1324	4885	1072	1296	727	1349	1347	2711
24,	4121	5470	1873	2399	1324	4679	1072	1204	727	1282	1347	2631
25,	3044	4558	1873	2286	1324	3069	1072	1204	727	1349	1347	3333
26	2707	6325	2097	1994	1324	2011	1072	1204	727	1713	1347	1422
27,	2482	4369	4349	1906	1324	1754	1072	1209	727	1257	1347	1422
28,	2818	3225	9793	1838	6394	1617	1072	1296	727	1257	1347	1422
29,	3085		7031	1766	13566	1462	1551	1204	727	1257	1347	1422
30,	2614		6081	1722	2931	1445	1382	1204	727	1257	1347	1422
31,	2209		5946		1805		1072	1204		1257		5786

DAILY DISCHARGE, IN SECOND-FEET, OF SCHUYLKILL RIVER, AT PHILADELPHIA, PHILADELPHIA COUNTY, PA.

1907.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	21017	1952	1762	2151	1621	1041	1603	1046	987	6903	1846	3563
2,	11857	1952	1762	2151	1621	3235	1603	1046	987	3907	1903	3173
3,	6260	2106	2112	1949	1621	2908	1300	1046	987	3073	8342	2823
4,	3731	1952	1886	1856	1621	1280	1124	1046	987	2855	5552	2487
5,	3531	1805	1762	1781	1621	1041	1124	1046	987	2939	4109	2406
6,	2325	1714	1762	1929	1621	1041	1124	1046	1247	2938	4004	2333
7,	1931	1714	1762	2111	1621	1041	1124	1046	987	2587	16158	2263
8,	1794	1714	1823	2111	1621	1041	1384	1046	987	2672	5932	2333
9,	2493	1714	2237	2388	1621	1041	1124	1111	987	19048	3761	2076
10,	1929	1714	2562	2041	1621	1041	1124	1046	987	10784	3785	8979
11,	1702	1799	2144	1911	1621	1041	1124	1046	987	3498	4867	24430
12,	3350	1716	1889	1781	1621	1041	1124	1046	2685	2954	3234	17940
13	6765	1714	3485	1781	1621	1041	1124	1046	2076	2716	2529	9540
14,	9035	1714	14916	1781	1621	1041	1124	1046	1294	2336	2096	7370
15,	8848	1714	21485	1781	1621	1041	1124	1046	987	2126	2042	11225
16,	3725	1714	14355	1781	1621	1041	1124	1046	987	2126	1787	8980
17,	3016	1714	7726	1781	1713	1041	1124	1046	987	1946	1793	7170
18,	2694	1714	6270	1781	1713	1041	1124	1046	987	1792	1954	5271
19,	2694	1714	4993	1781	1636	1041	1218	1046	987	1686	4405	4742
20,	6518	1714	7824	1781	1621	1041	1124	1046	987	1608	3666	4300
21,	6776	1714	6874	1781	1621	1041	1124	1046	1106	1608	2804	3656
22,	3126	1714	4584	1781	1621	1041	1124	1046	987	1608	3736	3266
23.	2887	1714	3528	1781	1621	1041	1124	1046	8650	1608	3234	13781
24,	2736	1714	3178	4067	1621	1041	1124	1046	23671	1608	6238	16838
25.	2610	1714	2997	3185	1621	1041	1124	1046	9781	1608	12943	10003
26	2518	1714	2592	2149	1621	1041	1124	1138	4900	1608	9467	7163
27,	2222	1714	2472	1781	1621	1041	1124	1046	2945	1608	7687	5112
28,	2058	1714	2382	1781	1621	1041	1124	1046	2606	4599	7142	3631
29,	2022	----------	2317	1781	1621	1041	1124	1046	23895	6548	5737	3241
30,	2020	----------	2292	1781	1621	1466	1124	1046	10627	4331	4311	4063
31,	1998	----------	2293	----------	1621	----------	1124	1046	----------	2304	----------	4300

DAILY DISCHARGE, IN SECOND-FEET, OF SCHUYLKILL RIVER, AT PHILADELPHIA, PHILADELPHIA COUNTY, PA.

1904	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	4215	2876	4876	3874	1512	1382	688	561	404	601	464	822
2,	3825	4954	4418	3966	1512	1259	688	561	404	601	464	822
3,	3382	2547	4418	3336	1470	1122	688	561	404	601	464	822
4,	2901	2362	4418	3202	1470	988	747	561	404	601	464	822
5,	2675	1895	4237	3070	1470	988	688	561	404	601	464	822
6,	2820	1606	4192	3070	1419	988	688	561	404	601	464	822
7,	3301	1606	4738	2962	4755	988	688	561	404	601	464	822
8,	4469	1606	6878	2962	21796	988	688	561	404	601	464	822
9,	4469	1606	8893	3330	17141	988	688	561	404	601	464	822
10,	3301	1584	7277	3330	10341	988	688	561	404	601	464	822
11,	2582	1602	5175	2962	6429	988	688	561	404	601	464	822
12,	6794	1584	5141	2962	4059	988	688	670	404	601	464	822
13.	13404	1689	5298	3030	3154	988	688	561	404	601	464	822
14,	8599	2805	5411	2594	2771	988	688	561	404	601	464	822
15,	5456	18454	5454	2550	4003	988	688	561	404	601	464	822
16,	3920	29615	5768	2502	5721	2029	688	561	404	601	464	822
17,	3556	8944	5316	2698	5271	1182	688	561	404	601	464	822
18,	2694	5158	5221	2242	5894	988	688	561	404	601	464	822
19,	2980	5052	16760	2282	3961	988	688	561	404	601	464	822
20,	2980	6702	12702	2862	2866	988	688	561	404	601	464	822
21,	2980	3679	8322	2912	2771	988	688	561	404	601	464	822
22,	2675	3679	6181	2466	6105	988	688	561	404	601	464	822
23	2675	3120	5454	2278	5343	988	688	561	404	601	464	822
24,	2437	3120	5278	2270	3862	988	1001	561	404	601	464	822
25,	2199	29479	4845	2006	3468	988	6001	561	404	623	464	822
26.	2115	29559	4301	2006	2631	988	10208	1574	404	731	464	822
27,	2353	11989	4108	2590	2197	988	3106	561	404	1131	464	822
28,	2675	6403	4024	2041	1752	988	1247	561	404	601	464	822
29,	2547	4964	4217	1874	1470	988	688	561	404	601	464	822
30,	2178		4301	1874	1880	988	688	561	512	601	468	822
31,	1928		4136		1968		688	561		601		832

DAILY DISCHARGE, IN SECOND-FEET, OF SCHUYLKILL RIVER, AT PHILADELPHIA, PHILADELPHIA COUNTY, PA.

1909.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	1031	757	3593	2854	6824	652	192	177	210	226	196	220
2,	1031	739	3827	2503	7669	560	192	177	210	226	226	199
3,	1031	737	3722	2152	5714	490	192	177	210	226	226	196
4,	1058	729	2853	2152	4405	490	192	177	210	226	196	188
5,	1345	730	2498	1976	3763	799	192	177	210	226	226	188
6,	11617	754	2250	1896	3118	929	192	177	210	226	226	199
7,	5219	1201	2104	1640	3587	778	192	177	210	226	196	188
8,	2857	1257	2775	1602	3587	560	192	177	210	226	196	188
9,	1986	946	3607	1059	2400	690	192	177	210	226	196	188
10,	1801	2543	4249	996	2038	490	192	177	210	226	196	188
11,	1479	6975	4670	933	2038	820	192	177	210	226	226	188
12,	1443	4720	2958	805	2212	690	192	177	210	226	226	188
13.	1250	2026	2648	805	2038	690	192	177	210	226	196	837
14,	1168	2833	2648	1949	1701	560	192	177	210	226	196	15448
15,	1083	3136	2467	5356	1394	490	192	177	210	291	196	6680
16,	1089	4602	2064	4352	1320	490	192	177	210	226	196	5061
17,	1089	9176	1882	2613	1250	458	192	204	297	226	196	1442
18,	1089	7353	1625	2543	1056	1268	192	177	210	226	196	956
19,	1089	5458	1405	2160	934	1268	192	177	309	226	226	736
20,	1089	9501	1238	3071	844	743	192	177	210	226	196	531
21,	1089	7523	1238	6379	824	512	192	177	210	226	196	531
22,	1089	5243	1238	5562	1546	490	192	177	210	226	196	564
23.	1095	7679	1238	4689	1876	490	192	177	210	226	192	531
24,	1326	15998	1166	4524	1395	431	192	177	210	226	226	531
25,	2053	16179	2798	3814	1065	380	192	177	210	226	196	478
26.	2596	9479	6133	3364	831	351	388	177	210	226	371	376
27.	2436	7079	4618	2946	644	351	205	177	210	254	226	333
28,	2003	5333	3819	2340	1681	490	192	177	210	226	221	333
29,	1578		3278	1791	2064	643	192	177	210	226	539	333
30,	1384		2836	4905	1216	458	192	177	210	279	371	333
31,	1222		2742		785		192	177		226		333

DAILY DISCHARGE, IN SECOND-FEET, OF SCHUYLKILL RIVER, AT PHILADELPHIA, PHILADELPHIA COUNTY, PA.

1910.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	266	1154	23627	731	2958	2193	1336	215	215	381	202	378
2,	235	942	17112	731	2268	1373	1700	215	1008	205	202	378
3,	250	1142	11772	731	1818	865	1619	215	1565	205	221	378
4,	250	1324	9262	676	1568	1351	1373	282	1654	205	1461	378
5,	387	1144	7477	676	1424	1721	1285	282	1822	205	7513	378
6,	387	632	6447	437	1191	1381	1106	282	1573	205	2197	378
7,	542	434	5926	437	1058	1818	705	282	1484	205	1326	378
8,	747	373	4892	676	1123	1306	597	330	1484	205	902	378
9,	830	346	4067	676	1193	1217	453	664	1179	205	615	378
10,	645	542	3261	567	1348	1448	488	1091	796	205	503	378
11.	465	542	2506	507	1348	1450	571	2491	558	205	461	295
12,	387	351	2506	507	1193	2710	571	868	558	205	294	295
13	266	351	2506	487	1128	4073	482	474	558	205	202	295
14,	266	434	2101	701	988	2240	482	282	558	205	294	295
15,	235	484	1741	413	918	1781	398	282	558	205	331	295
16,	240	1154	1706	389	673	2079	398	282	474	205	331	295
17,	327	1949	1541	511	673	5184	399	474	390	205	260	378
18,	327	5427	1456	642	673	5694	565	390	390	205	294	378
19,	646	5188	1386	7662	526	6834	795	1484	390	205	294	203
20,	1035	2994	1241	4752	620	6574	470	857	237	334	288	228
21,	4249	4948	1241	6927	688	4385	353	410	215	288	294	286
22,	36607	20670	1241	4711	1263	3024	353	390	215	349	350	286
23,	21671	17485	1471	3727	1508	2380	353	215	215	349	294	286
24,	8099	7570	1316	3491	1068	2177	336	215	215	464	294	682
25,	4560	3986	1241	12688	848	1734	215	215	215	405	329	625
26	3263	2619	1166	11272	8559	1254	215	215	538	320	329	682
27,	2314	2314	1166	6957	6314	1094	215	215	840	205	285	1181
28,	1959	13420	1166	4604	4098	840	215	215	731	297	285	570
29,	1799	----------	1106	3291	2958	840	215	215	558	205	294	514
30,	1454	----------	1106	3091	2178	904	215	215	428	205	427	1047
31,	1314	----------	1054	----------	1658	----------	215	215	----------	205	----------	1549

DAILY DISCHARGE, IN SECOND-FEET, OF SCHUYLKILL RIVER, AT PHILADELPHIA, PHILADELPHIA COUNTY, PA.

1911.	JAN.	FEB.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
DAY.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.	Dis.
1,	1630	1069	1181	2419	1685	1617	556	290	23238	1547	1761	2885
2,	3437	764	953	2255	1955	1507	284	290	8200	6787	2046	2622
3,	8679	617	864	1610	2242	1189	228	290	4342	2660	2115	2425
4,	11157	1651	769	1610	1617	760	417	721	2726	6378	1761	2592
5,	5062	2462	831	3860	1301	772	592	823	2143	4303	1528	2592
6,	3259	1530	891	4189	1358	1038	390	832	2201	3954	2274	2105
7,	2636	967	891	1971	1005	1382	526	714	1394	2163	4242	2105
8,	2404	779	891	1875	976	1044	1899	651	1319	2028	3470	2105
9,	2404	900	769	1947	976	867	2044	566	1188	1870	2392	2105
10,	1803	845	665	2222	976	347	858	566	1188	1547	1753	1901
11,	1558	687	1221	2222	857	347	727	454	1924	1403	1670	1818
12,	1344	687	1353	1791	758	1190	601	454	2000	1547	1670	1666
13	1140	920	1154	1628	674	4447	601	197	1653	1547	1930	1504
14,	1636	1170	1020	1235	773	5507	221	373	1123	1274	2270	1512
15,	2810	1737	4435	1963	773	3997	399	401	1191	1148	2637	2457
16,	3138	1185	2985	2520	462	2709	876	887	1656	1148	3606	4263
17,	1970	1088	1613	2030	486	2007	2239	457	1726	1149	2642	6663
18,	1327	1700	1154	1411	486	1540	6702	567	1256	4750	9212	3852
19,	913	2126	1154	1362	486	1320	2735	432	1113	8470	8602	3537
20,	1039	2751	1154	4515	486	1023	1323	738	1014	4538	6162	3032
21,	1039	2329	1154	6421	770	1023	1088	738	558	4327	4457	3032
22,	1039	1527	1154	4678	468	636	1018	373	782	4580	4260	3888
23,	903	1127	901	4678	397	636	796	198	782	6642	3051	5148
24,	903	901	610	3785	365	636	861	373	558	8337	5502	4751
25,	671	901	665	2820	365	310	1515	373	558	6087	6553	4023
26	537	1540	665	2490	365	636	824	346	558	4538	3822	3748
27,	625	1809	908	2025	365	636	648	1046	558	5079	3266	4158
28,	1336	1680	2775	1812	365	984	291	1765	550	2971	3147	4906
29	1384	----------	3521	1609	365	769	370	1468	558	2458	3385	4095
30,	1792	----------	3026	1533	294	769	291	3865	1394	2509	3385	3252
31,	1407	----------	2250	----------	486	----------	370	20971	----------	2094	----------	3341

ESTIMATED MONTHLY DISCHARGE, SCHUYLKILL RIVER, AT PHILADELPHIA, PHILADELPHIA COUNTY.

(Drainage area 1,920 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1903.					
January,	18230	2278	6229	3.25	3.747
February,	25019	4011	7231	3.72	3.874
March,	29874	3657	8474	4.43	5.107
April,	19520	1866	6782	3.54	3.950
May,	2693	1506	1751	.91	1.049
June,	4355	1445	2180	1.14	1.272
July,	11182	1362	2706	1.41	1.626
August,	5195	1385	2026	1.06	1.222
September,	2880	1182	1324	.69	0.770
October,	29986	1346	4441	2.32	2.675
November,	1738	1260	1292	.67	0.748
December,	14656	1416	2641	1.37	1.579
The year,	29986	1182	3923	2.04	27.619
1904.					
January,	27210	1303	3196	1.67	1.925
February,	22810	1445	3742	1.95	2.103
March,	36180	2426	6187	3.23	3.724
April,	12470	1774	3218	1.68	1.874
May,	5997	1292	1448	.76	0.876
June,	12850	1325	2901	1.51	1.685
July,	871	771	776	.40	0.461
August,	5339	1595	2176	1.14	1.314
September,	29490	994	2194	1.15	1.283
October,	11350	1360	2278	1.19	1.372
November,	5264	1495	2013	1.05	1.171
December,	4200	1258	1542	.80	0.922
The year,	36180	771	2639	1.38	18.710
1905.					
January,	30190	1350	4641	2.420	2.790
February,	2276	1540	1606	0.839	0.874
March,	23160	1720	9329	4.870	5.615
April,	7427	1902	3634	1.900	2.120
May,	1492	1340	1353	0.707	0.815
June,	813	813	813	0.425	0.475
July,	595	595	595	0.311	0.358
August,	6572	1332	1855	0.969	1.117
September,	8125	1542	2138	1.120	1.250
October,	5992	1327	1788	0.934	1.077
November,	7730	755	1156	0.604	0.675
December,	10390	1689	3063	1.600	1.845
The year,	30190	595	2664	1.390	19.011
1906.					
January,	7810	1690	3010	1.570	1.810
February,	16100	1630	3280	1.710	1.781
March,	27000	1870	4920	2.560	2.951
April,	16200	1720	4880	2.540	2.834
May,	13600	1320	2010	1.050	1.211
June,	20000	1260	2780	1.450	1.618
July,	5490	1070	1310	0.682	0.786
August,	10100	1200	1640	0.854	0.984
September,	1210	727	753	0.392	0.437
October,	4260	1260	1510	0.786	0.906
November,	2500	1350	1400	0.729	0.813
December,	5790	1420	1890	0.984	1.134
The year,	27000	727	2450	1.280	17.265

ESTIMATED MONTHLY DISCHARGE, SCHUYLKILL RIVER, AT PHILADELPHIA, PHILADELPHIA COUNTY.

(Drainage area 1,920 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1907.					
January,	21000	1700	4390	2.29	2.64
February,	2110	1710	1760	.92	.95
March,	21500	1760	4520	2.35	2.71
April,	4070	1780	2010	1.05	1.17
May,	1710	1620	1630	.85	.98
June,	3240	1040	1200	.62	.70
July,	1600	1120	1170	.61	.70
August,	1140	1050	1050	.55	.68
September,	23900	987	3740	1.95	2.13
October,	19000	1610	3530	1.84	2.12
November,	16200	1790	4900	2.55	2.84
December,	24400	2080	6720	3.50	4.04
The year,	24400	987	3050	1.59	21.66
1908.					
January,	13400	1930	3710	1.93	2.22
February,	29600	1580	6900	3.59	3.87
March,	16800	4020	5860	3.05	3.52
April,	3970	1870	2740	1.43	1.60
May,	21800	1420	4530	2.36	2.72
June,	2030	988	1060	.55	.62
July,	10200	688	1270	.66	.76
August,	1570	561	597	.31	.36
September,	512	404	408	.21	.24
October,	1130	601	623	.32	.37
November,	468	464	464	.24	.27
December,	832	822	822	.43	.49
The year,	29600	404	2420	1.26	17.04
1909.					
January,	11600	1030	1890	0.984	1.13
February,	16200	729	5060	2.640	2.75
March,	6130	1170	2780	1.450	1.67
April,	6380	805	2790	1.450	1.63
May,	7670	644	2320	1.210	1.40
June,	1270	351	617	0.321	0.36
July,	388	192	199	0.104	0.12
August,	204	177	178	0.093	0.11
September,	309	210	216	0.112	0.12
October,	291	226	231	0.120	0.14
November,	539	196	229	0.119	0.13
December,	15400	188	1240	0.646	0.74
The year,	16200	177	1480	0.771	10.30
1910.					
January,	36607	235	3097	1.613	1.860
February,	20670	346	3569	1.852	1.928
March,	23627	1054	4058	2.114	2.437
April,	12688	389	2789	1.453	1.621
May,	8559	526	1801	.938	1.082
June,	6834	840	2397	1.248	1.394
July,	1700	215	603	.314	.362
August,	2491	215	467	.243	.280
September,	1822	215	721	.376	.420
October,	464	205	248	.129	.149
November,	7513	202	712	.371	.414
December,	1549	203	466	.243	.280
The year,	36607	202	1744	.908	12.227

ESTIMATED MONTHLY DISCHARGE, SCHUYLKILL RIVER, AT PHILADELPHIA, PHILADELPHIA COUNTY.

(Drainage area 1,920 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1911.					
January,	11157	537	[illegible]	1.19[illegible]	1.375
February,	2751	617	1337	.696	.725
March,	4435	610	1406	.732	.844
April,	6421	1235	2550	1.328	1.482
May,	2242	294	804	.419	.483
June,	5507	310	1388	.723	.806
July,	6702	221	1042	.543	.626
August,	20971	197	1362	.709	.818
September,	23238	550	2315	1.206	1.346
October,	8470	1148	3769	1.963	2.263
November,	9212	1528	3486	1.816	2.026
December,	6663	1504	3164	1.648	1.900
The year,	23238	197	2076	1.081	14.694

DARBY CREEK.

DESCRIPTION OF BASIN.

Darby creek, a tributary of the Delaware river, at Essington, Philadelphia County, drains approximately 78 square miles in Chester, Philadelphia and Delaware Counties. Rising in the northwestern part of Chester County, just south of Malvern station, it follows a general northeasterly direction, through a thickly populated, deforested, rolling agricultural region, to the tidal swamps of the Delaware river, just below Darby borough, where it turns southwestward along the western side of the swamp to its mouth, a total length of approximately 24 miles. Its source lies at an elevation of about 475 feet above sea level, and its mouth at sea level. In its upper section the slope of the stream is steep, while in the lower section it is very flat. The principal tributary is Bobbs creek, which enters it six miles above its mouth. A few mills operated by waterpower exist on this stream.

The average yearly rainfall over this watershed is from 45 to 50 inches.

The flow has been measured since July 31st, 1911, at Lansdowne, approximately 8 miles above the mouth, above which point the tributary drainage area is 35 square miles.

DELAWARE BASIN—STATION NO. 21.

DARBY CREEK AT LANSDOWNE.

DESCRIPTION OF STATION.

This station was established July 31, 1911, by the Water Supply Commission of Pennsylvania. A 10 foot staff gage has been fastened to a large tree which projects over the water on the right bank of the stream, about 300 feet upstream from a single span, through truss, highway bridge, near the greenhouse of C. H. Baker.

Discharge measurements at low and normal stages of the creek are made by wading near the gage and at high water stages from the highway bridge. The initial point for soundings is the right end of upstream handrail on bridge. No B. M. has as yet been established. The creek channel is straight for approximately 50 feet above the gage and 600 feet below it. At wading section the bed is small stones and mud, and at the bridge the bottom is mud and liable to changes in depth. Neither bank at the bridge section overflows at high stages. Slack water from the dam of the Garrett Paper Mill extends to a point about 100 feet above the bridge, and 200 feet below the gage, however, there is a fair flow under the bridge, except at extreme low water. This gage is read twice daily by C. H. Baker.

Since the establishment of this station 3 discharge measurements have been made. No rating curve has been determined, and only the discharge measurements and gage heights have been published.

DISCHARGE MEASUREMENTS, DARBY CREEK, AT LANSDOWNE, DELAWARE COUNTY, PA.

(Drainage area 35 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1911.							
1	Oct. 3,	Langenheim,	54	117	.48	1.11	56	From highway bridge.
2	Dec. 19,	do	54	127	.38	1.33	48	do
	1912.							
3	April 3,	Langenheim & Reckord.	48	64	1.58	1.68	102	Wading msmt. 150 ft. below gage.

MEAN DAILY GAGE HEIGHTS, IN FEET, OF DARBY CREEK, AT LANSDOWNE, DELAWARE COUNTY, PA.

1911. DAY.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1,	----------	.79	2.03	1.25	1.12	1.28
2,	----------	.66	1.04	1.22	1.08	1.15
3,	----------	.70	1.04	1.05	1.04	1.30
4,	----------	.74	1.04	1.04	1.09	1.35
5,	----------	.82	1.10	1.12	1.18	1.20
6,	----------	.88	1.24	1.10	1.20	1.42
7,	----------	.88	1.22	1.30	1.70	1.40
8.	----------	.72	1.10	1.22	1.22	1.38
9,	----------	.72	.98	1.15	1.15	1.33
10,	----------	.74	1.24	1.02	1.16	1.38
11,	----------	.66	1.85	1.08	1.18	1.16
12,	----------	.82	1.44	.98	1.31	1.25
13,	----------	.72	1.30	1.08	1.22	1.20
14,	----------	.70	1.25	1.10	1.15	1.12
15,	----------	.76	1.42	1.28	2.00	1.66
16,	----------	1.04	1.25	1.12	1.40	1.80
17,	----------	.76	1.40	1.15	1.18	1.00
18,	----------	.74	1.40	2.35	1.92	1.10
19,	----------	.74	1.05	2.60	1.30	.92
20,	----------	.86	1.21	2.25	1.36	1.20
21.	----------	.66	1.42	1.90	1.35	1.15
22,	----------	.75	1.20	1.90	1.30	1.30
23,	----------	.64	1.22	2.25	1.32	1.70
24,	----------	.69	1.30	1.40	1.82	1.30
25,	----------	1.01	1.18	1.11	1.42	1.20
26,	----------	1.05	1.20	1.08	1.80	1.15
27,	----------	2.96	1.18	1.05	1.58	1.76
28,	----------	1.28	1.08	1.06	1.75	1.10
29,	----------	1.14	1.56	1.12	1.65	1.12
30,	----------	1.76	1.35	1.05	1.30	1.20
31,	0.98	a6.96	----------	1.10	----------	1.80

a Maximum 7.76 at 1.30 p. m.

BRANDYWINE CREEK.

DESCRIPTION OF BASIN.

Brandywine creek, a large tributary of the Delaware river, in Pennsylvania, which passes through the northern part of the State of Delaware, and enters the river just below Wilmington, drains approximately 300 square miles in Pennsylvania. Rising in two branches, the east and west, which head on the western edge of Chester County, in the Welsh Mountains, within a few miles of each other, these branches diverge, one passing through Downingtown, and the other through a rolling country, thickly populated, well developed agricul-mile north of Lenape, in the south-central part of Chester County. The stream and its branches flow in a general southerly direction through a rolling county, thickly populated, well developed agriculturally and practically deforested, its total length in Pennsylvania being about 35 miles. The elevation of the sources of the two branches is about 900 feet; at the State line it is 140 feet, and at the mouth sea level. The slope of the stream is gradual, but steep enough to cause small waterpowers to be extensively developed along it and its branches. On the drainage basin lie numerous towns and villages, several of which obtain water from the branches. The average yearly rainfall over this watershed is from 45 to 50 inches.

The flow of this stream has been measured since August 1st, 1911, at Chadds Ford, near the Pennsylvania-Delaware State line, about 10 miles above the mouth, the drainage area above the gage being approximately 285 square miles.

DELAWARE BASIN—STATION NO. 22.

BRANDYWINE CREEK AT CHADDS FORD.

DESCRIPTION OF STATION.

This station was established on August 1st, 1911, by the Water Supply Commission of Pennsylvania. It is located on a two-span, iron girder bridge of the Pennsylvania Railroad, with foot-path along the upstream side, which crosses the creek at this point. A standard chain gage is bolted to the rail of the foot pathway, on the upstream side in the left span. The length of chain from center of rivet to bottom of weight is 24.00 feet.

Discharge measurements are made from the foot-path at all times as wading is practically impossible on account of the depth of water. The initial point for soundings is a cross mark cut in the hand rail near face of left abutment. The bench mark is a chisel mark on outside edge of handrail post, flush with top of gage board, or post nearest to box of gage, and the distance from this point to zero of gage is 23.89 feet. The channel above the bridge is straight for 150 feet, then curves to the west, the tail race of a mill entering the stream on the left bank about 150 feet above the bridge; below the bridge the channel is straight for 250 feet, and then curves to the west. The bed of the stream is mud, gravel and stones, and fairly permanent. The left bank of the stream at the bridge is the railroad embankment, and abutment, and is high and steep, and does not overflow. The right bank of the creek proper is low and flat and at high stages water floods over a flat 600 feet wide, under the wooden trestle of the Pennsylvania Railroad. From this trestle in high water periods it will be necessary to measure the overflow water. The gage is read twice daily by E. J. Reynolds.

Since the establishment of this station 4 discharge measurements have been made. No rating curve has been determined, and only the discharge measurements and gage heights have been published.

DISCHARGE MEASUREMENTS, BRANDYWINE CREEK, AT CHADDS FORD, DELAWARE COUNTY, PA.

(*Drainage area* 285 *square miles.*)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1908.							
1	Oct. 5,	Langenheim,	119	259	.715	0.95	185	
	1911.							
2	Oct. 3,	do	108	336	1.06	1.74	357	
3	Dec. 20,	do	109	350	1.16	1.85	405	
	1912.							
4	April 3,	Langenheim & Reckord.	114	479	2.05	3.04	982	

DAILY GAGE HEIGHTS, IN FEET, OF BRANDYWINE CREEK, AT CHADDS FORD, DELAWARE COUNTY, PA.

1911. DAY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1,	1.06	4.79	1.62	1.69	1.98
2,	1.06	2.57	1.98	1.66	1.95
3,	1.70	2.15	1.68	1.61	1.90
4,	1.56	1.89	1.58	1.61	2.01
5,	1.36	1.80	1.60	1.61	1.95
6,	1.40	1.75	1.44	1.66	1.87
7,	1.22	1.62	1.45	2.25	1.81
8,	1.55	1.59	1.44	1.91	1.79
9,	1.34	1.58	1.38	1.77	1.81
10,	1.69	1.57	1.50	1.70	1.79
11,	1.64	3.06	1.60	1.73	1.79
12,	1.45	2.37	1.55	1.67	1.78
13,	1.33	1.68	1.43	2.27	1.77
14,	1.40	1.55	1.35	1.77	1.75
15,	1.34	1.99	1.55	2.81	2.43
16,	1.16	2.19	1.45	2.33	2.85
17,	1.10	1.84	1.45	1.92	2.47
18,	1.16	1.61	b 4.70	2.87	2.65
19,	1.10	1.53	4.21	2.84	1.93
20,	1.01	1.51	2.02	2.03	1.88
21,	1.04	1.47	2.04	1.91	1.86
22,	1.03	1.49	2.19	1.84	2.00
23,	1.00	1.44	3.70	1.73	3.27
24,	1.07	1.45	2.32	2.83	2.76
25,	1.40	1.46	1.86	2.20	2.28
26,	1.49	1.43	1.88	2.09	2.24
27,	4.22	1.41	1.84	1.97	3.32
28,	2.04	1.39	1.80	2.27	2.53
29,	1.64	2.11	1.75	2.36	2.12
30,	2.10	2.08	1.76	1.97	2.00
31,	a 7.65	----------	1.72	----------	2.36

a Max. 8.84 feet at 4.45 p. m.
b Max. 5.99 feet at 4.30 p. m.

SUSQUEHANNA BASIN.

CHENANGO RIVER.

DESCRIPTION OF BASIN.

The Chenango River rises in the central part of Madison County, New York and flows southward into the Susquehanna river at Binghamton, N. Y. It is approximately seventy miles long, and its drainage area comprises about 1,580 square miles. Its headwater valleys lie at an elevation of about 1,200 feet above sea level, and its mouth is 864 feet above tide. Its bed is, as a rule, composed of sand and gravel and the stream is bordered, in many places, by bottom land, subject to overflow. A portion of the headwaters are diverted across the Chenango-Mohawk divide through Oriskany Creek to feed the summit level of the Erie Canal.

Considerable power is developed at Binghamton and at Port Dickinson, three miles above.

The mean annual precipitation over this watershed is from 35 to 40 inches.

The discharge of this stream has been measured since July 31st, 1901, at Binghamton, N. Y., near its mouth.

SUSQUEHANNA BASIN—STATION NO. 1.

CHENANGO RIVER AT BINGHAMTON, N. Y.

DESCRIPTION OF STATION.

This station was established July 31st, 1901, by United States Geological Survey and has since been maintained through co-operation with the New York State Engineer. It is located on the Court Street Bridge, at Binghamton.

The channel is obstructed by three masonry piers. A small rift between the station and the confluence of Chenango River with the Susquehanna River, about 2,500 feet below, cuts off backwater at ordinary stages of the rivers. The bridge crosses the stream at right angles, and the bed is of gravel and small cobble stones, there being a smooth, uniform current.

Discharge measurements are made from the Court Street Bridge. A boxed wire gage is fastened to the vertical supports of the hand-railing on the upstream side of the first span from the right bank. The bench mark is a circular chiselled draft on the upstream corner of the bridge seat on the left abutment, its elevation being 34.02 feet above gage datum.

In estimating the run-off of Chenango River, the area directly tributary to storage reservoirs, from which diversion is made to supply the Erie Canal, has been deducted from the total natural drainage area. The diversion area of six reservoirs at the head of Chenango River, whose outflow is turned into the Erie Canal through Limestone Creek, is thirty square miles. The diversion area of De Ruyter Reservoir, at the head of Tioughnioga River, whose outflow is turned into the Erie Canal through Limestone Creek, is eighteen square miles. These two areas have been subtracted from the natural drainage area of 1,580 square miles, giving an effective area of 1,532 square miles. This estimate is approximate, as no allowance for direct inflow to feeder channels from addition areas, nor for waste into the original stream, has been made. The gross area from which more or less run-off is diverted is about 105 square miles.

There is a low dam about one mile upstream from the gaging station. For periods during freshets, or at times when there is an abnormal rise on one stream, accompanied by a similar rise in the other stream, either the Chenango or Susquehanna River record at Binghamton may be affected by backwater, indicating a too great discharge. For freshets of considerable duration the flow of the two streams will be more nearly equalized. During the winter months the discharge is usually very little affected by the presence of ice.

The data published for this station is based upon four rating curves, each one having been changed, or modified, as additional meter measurements were obtained, made necessary by ice and backwater conditions.

Since the establishment of this station fifty-two discharge measurements had been made.

The following data have been furnished by the United States Geological Survey:

DISCHARGE MEASUREMENTS OF CHENANGO RIVER, AT BINGHAMTON, N. Y.

(Drainage Area 1530 Square Miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Feet per sec.	Ft.	Sec.-ft.	
	1901.							
1.	July 2,	Murphy,	------	689	1.23	5.64	848	
2.	July 8,	do	------	764	1.46	5.78	1,119	
3.	July 9,	do	------	617	1.53	5.71	942	
4.	July 29,	do	------	602	.61	5.21	405	
5.	July 29,	do	------	469	.90	5.21	425	
6.	Aug. 19,	do	------	547	1.04	5.48	566	
7.	Aug. 19,	do	------	681	.85	5.49	577	
8.	Oct. 19,	do	------	646	1.53	5.81	987	
9.	Oct. 19,	do	------	775	1.20	5.82	927	
	1902.							
10.	Mar. 27,	Murphy,	------	1,384	3.04	8.15	4,201	
11.	Mar. 28,	do	------	1,489	2.94	8.21	4,377	
12.	Mar. 29,	do	------	1,590	3.27	8.75	5,205	
13.	June 6,	Horton,	------	956	2.52	7.00	2,407	Rough measurement.
14.	July 1,	Murphy,	------	1,534	3.14	8.49	4,815	
15.	July 3,	do	------	1,155	2.33	7.24	2,688	
16.	July 16,	do	------	995	2.13	6.64	2,098	
17.	Aug. 3,	do	------	1,775	3.12	9.16	5,543	
18.	Aug. 14,	do	------	877	1.83	6.32	1,605	
19.	Aug. 15,	do	------	841	1.48	6.20	1,341	
20.	Sept. 3,	Covert,	------	675	.80	5.56	546	
	1903.							
21.	April 6,	Murphy,	------	1,359	2.71	7.72	3,695	
22.	May 15,	do	------	646	.83	5.49	538	
23.	June 13,	Covert,	------	1,490	1.93	8.06	2,877	
24.	Aug. 19,	Hoyt,	------	621	.97	5.62	601	
25.	Aug. 21,	Covert,	------	1,006	2.23	6.72	2,243	
26.	Oct. 1,	Halsey,	------	650	1.09	5.51	709	
27.	Oct. 10,	Covert,	------	5,411	5.23	19.81	28,300	
	1904.							
28.	Mar. 8,	Covert,	------	3,702	3.45	*14.90	9,104	*Backwater, caused by ice jam
29.	April 8,	Horton,	------	2,459	5.42	10.86	11,632	
30.	July 12,	Covert,	------	595	.87	5.42	516	
31.	Sept. 10,	do	------	467	1.15	5.55	539	
32.	Nov. 22,	Beebe,	------	1,022	2.45	6.86	2,505	
	1905.							
33.	May 16,	Beebe,	305	770	2.22	6.37	1,706	
34.	Aug. 19,	Covert,	320	844	1.83	6.42	1,545	
35.	Aug. 25,	Weeks,	290	566	1.29	5.64	728	
	1906.							
36.	Oct. 3,	Covert,	225	464	0.85	5.30	396	
37.	Nov. 8,	do	300	681	1.54	5.95	1,050	
	1907.							
38.	June 20,	Wood and Hoyt,	290	535	1.21	5.67	648	
	1908.							
39.	Sept. 2,	Adams,	220	387	0.43	5.05	165	
40.	Sept. 26,	do	------	------	------	4.90	118	
41.	Oct. 21,	Wood and French,	209	405	0.43	4.95	174	
42.	Nov. 2,	Covert,	288	496	0.79	5.33	392	
	1910.							
43.	Mar. 7,	Hoyt,	320	4,120	5.68	16.82	23,400	Sub-surface coeff. .85
44.	May 9,	Covert,	310	873	2.33	6.50	2,030	
45.	July 26,	Hoyt and Carman,	160	186	.71	4.95	132	Measurement made at wading station below bridge.

DISCHARGE MEASUREMENTS OF CHENANGO RIVER, AT BINGHAMTON, N. Y.

(Drainage area 1,530 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1911.							
46.	Mar. 29,	Cockroft, ...	340	4,150	5.83	16.30	24,200	
47.	April 6,	do	340	2,890	5.53	12.60	16,000	
48.	April 21,	DeGolyer, ...	316	1,280	3.18	7.90	4,080	
49.	June 14,	do	334	1,800	2.92	9.39	5,250	
50.	June 16,	do	330	1,060	2.16	7.16	2,290	
51.	Sept. 28,	Covert, ...	284	576	.81	5.54	468	
52.	Oct. 4,*	DeGolyer, ...	304	698	1.22	5.95	849	*Measurements made partly by wading under Court street Bridge.

DISCHARGE TABLE OF CHENANGO RIVER, AT BINGHAMTON, N. Y. FROM AUGUST 1, 1901, TO DECEMBER 31, 1905.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
5.00	160	8.00	4100	.90	9160	.80	14880	.70	21040
.10	256	.10	4250	11.00	9350	.90	15090	.80	21260
.20	352	.20	4400	.10	9540	14.00	15300	.90	21480
.30	450	.30	4550	.20	9730	.10	15510	17.00	21700
.40	550	.40	4700	.30	9920	.20	15720	.10	21925
.50	650	.50	4850	.40	10110	.30	15930	.20	22150
.60	760	.60	5020	.50	10300	.40	16140	.30	22375
.70	875	.70	5190	.60	10490	.50	16350	.40	22600
.80	995	.80	5360	.70	10680	.60	16560	.50	22825
.90	1115	.90	5530	.80	10870	.70	16770	.60	23050
6.00	1235	9.00	5700	.90	10060	.80	16980	.70	23275
.10	1365	.10	5880	12.00	11250	.90	17190	.80	23500
.20	1495	.20	6060	.10	11450	15.00	17400	.90	23725
.30	1625	.30	6240	.20	11650	.10	17610	18.00	23950
.40	1755	.40	6420	.30	11850	.20	17820	.10	24185
.50	1885	.50	6600	.40	12050	.30	18030	.20	24420
.60	2025	.60	6780	.50	12250	.40	18240	.30	24655
.70	2165	.70	6960	.60	12450	.50	18450	.40	24890
.80	2305	.80	7140	.70	12650	.60	18660	.50	25125
.90	2450	.90	7320	.80	12850	.70	18870	.60	25360
7.00	2600	10.00	7500	.90	13050	.80	19080	.70	25595
.10	2750	.10	7680	13.00	13250	.90	19290	.80	25830
.20	2900	.20	7860	.10	13450	16.00	19500	.90	26065
.30	3050	.30	8040	.20	13650	.10	19720	19.00	26300
.40	3200	.40	8220	.30	13850	.20	19940	.10	26540
.50	3350	.50	8400	.40	14050	.30	20160	.20	26780
.60	3500	.60	8590	.50	14250	.40	20380	.30	27020
.70	3650	.70	8780	.60	14460	.50	20600	.40	27260
.80	3800	.80	8970	.70	14670	.60	20820	.50	27500
.90	3950								

Note:—The above table is applicable only for open-channel conditions. It is based on discharge measurements made during 1901-1905. It is well defined between gage heights 5 feet and 9 feet. The table has been extended above 9 feet, being based on one measurement 15.8 feet. Tangent at 19.5 feet, differences above this point 260 per tenth.

DISCHARGE TABLE OF CHENANGO RIVER, AT BINGHAMTON, N. Y., FOR 1906.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
4.90	115	.80	2180	.70	5215	.50	8400	.30	11850
5.00	175	.90	2325	.80	5390	.60	8590	.40	12050
.10	240	7.00	2470	.90	5565	.70	8780	.50	12250
.20	315	.10	2615	9.00	5740	.80	8970	.60	12450
.30	396	.20	2765	.10	5915	.90	9160	.70	12650
.40	480	.30	2915	.20	6090	11.00	9350	.80	12850
.50	570	.40	3065	.30	6265	.10	9540	.90	13250
.60	665	.50	3220	.40	6440	.20	9730	13.00	13250
.70	765	.60	3375	.50	6615	.30	9920	.10	13455
.80	875	.70	3535	.60	6790	.40	10110	.20	13660
.90	990	.80	3695	.70	6965	.50	10300	.30	13865
6.00	1110	.90	3855	.80	7140	.60	10490	.40	14070
.10	1235	8.00	4020	.90	7320	.70	10680	.50	14275
.20	1360	.10	4185	10.00	7500	.80	10870	.60	14480
.30	1490	.20	4355	.10	7680	.90	11060	.70	14685
.40	1625	.30	4525	.20	7860	12.00	11250	.80	14890
.50	1760	.40	4695	.30	8040	.10	11450	.90	15095
.60	1900	.50	4865	.40	8220	.20	11650	14.00	15300
.70	2040	.60	5040						

Note:—The above table is applicable only for open-channel conditions. It is based on discharge measurements made during 1901-1906. It is well defined between gage heights 5.3 and 10 feet and is based on one high water measurement above 10 feet.

DISCHARGE TABLE OF CHENANGO RIVER, AT BINGHAMTON, N. Y., FROM 1907 TO 1910.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
4.60	10	.50	3220	.40	8220	.30	13850	.20	19940
.70	35	.60	3375	.50	8400	.40	14050	.30	20160
.80	70	.70	3535	.60	8590	.50	14250	.40	20380
.90	115	.80	3695	.70	8780	.60	14460	.50	20600
5.00	170	.90	3855	.80	8970	.70	14670	.60	20820
.10	235	8.00	4020	.90	9160	.80	14880	.70	21040
.20	305	.10	4185	11.00	9350	.90	15090	.80	21260
.30	380	.20	4355	.10	9540	14.00	15300	.90	21480
.40	460	.30	4525	.20	9730	.10	15510	17.00	21700
.50	550	.40	4695	.30	9920	.20	15720	.10	21920
.60	645	.50	4865	.40	10110	.30	15930	.20	22140
.70	745	.60	5040	.50	10300	.40	16140	.30	22360
.80	850	.70	5215	.60	10490	.50	16350	.40	22580
.90	960	.80	5390	.70	10680	.60	16560	.50	22800
6.00	1080	.90	5565	.80	10870	.70	16770	.60	23030
.10	1210	9.00	5740	.90	11060	.80	16980	.70	23260
.20	1345	.10	5915	12.00	11250	.90	17190	.80	23490
.30	1480	.20	6090	.10	11450	15.00	17400	.90	23720
.40	1615	.30	6265	.20	11650	.10	17610	18.00	23950
.50	1755	.40	6440	.30	11850	.20	17820	.10	24180
.60	1895	.50	6615	.40	12050	.30	18030	.20	24410
.70	2035	.60	6790	.50	12250	.40	18240	.30	24640
.80	2180	.70	6965	.60	12450	.50	18450	.40	24870
.90	2325	.80	7140	.70	12650	.60	18660	.50	25100
7.00	2470	.90	7320	.80	12850	.70	18870	.60	25340
.10	2615	10.00	7500	.90	13050	.80	19080	.70	25580
.20	2765	.10	7680	13.00	13250	.90	19290	.80	25820
.30	2915	.20	7860	.10	13450	16.00	19500	.90	26060
.40	3065	.30	8040	.20	13650	.10	19720		

DISCHARGE TABLE OF CHENANGO RIVER, AT BINGHAMTON, N. Y., FROM 1907 TO 1910.—(Continued.)

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
19.00	26300	.10	29060	.10	31660	.10	34260	.10	36860
.10	26540	.20	29320	.20	31920	.20	34520	.20	37120
.20	26780	.30	29580	.30	32180	.30	34780	.30	37380
.30	27020	.40	29840	.40	32440	.40	35040	.40	37640
.40	27260	.50	30100	.50	32700	.50	35300	.50	37900
.50	27500	.60	30360	.60	32960	.60	35560	.60	38160
.60	27760	.70	30620	.70	33220	.70	35820	.70	38420
.70	28020	.80	30880	.80	33480	.80	36080	.80	38680
.80	28280	.90	31140	.90	33740	.90	36340	.90	38940
.90	28540	21.00	31400	22.00	34000	23.00	36600	24.00	39200
20.00	28800								

DISCHARGE TABLE OF CHENANGO RIVER, AT BINGHAMTON N. Y., FROM JAN. 1, 1911, TO JUNE 12, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
4.60	10	.40	3190	.20	8920	.90	15770	.60	23520
.70	35	.50	3360	.30	9150	13.00	16040	.70	23810
.80	70	.60	3520	.40	9390	.10	16320	.80	24100
.90	115	.70	3700	.50	9630	.20	16600	.90	24400
5.00	170	.80	3880	.60	9870	.30	16880	16.00	24700
.10	225	.90	4060	.70	10110	.40	17160	.10	25000
.20	305	8.00	4240	.80	10350	.50	17440	.20	25300
.30	380	.10	4430	.90	10600	.60	17720	.30	25600
.40	460	.20	4620	11.00	10850	.70	18010	.40	25900
.50	550	.30	4820	.10	11100	.80	18300	.50	26200
.60	645	.40	5020	.20	11350	.90	18590	.60	26500
.70	745	.50	5220	.30	11600	14.00	18880	.70	26810
.80	850	.60	5430	.40	11850	.10	19170	.80	27120
.90	960	.70	5640	.50	12100	.20	19460	.90	27430
6.00	1080	.80	5850	.60	12350	.30	19750	17.00	27740
.10	1220	.90	6060	.70	12600	.40	20040	.10	28050
.20	1260	9.00	6270	.80	12860	.50	20330	.20	28360
.30	1500	.10	6480	.90	13120	.60	20620	.30	28670
.40	1650	.20	6690	12.00	13380	.70	20910	.40	28980
.50	1800	.30	6910	.10	13640	.80	21200	.50	29290
.60	1950	.40	7130	.20	13900	.90	21490	.60	29600
.70	2100	.50	7350	.30	14160	15.00	21780	.70	29910
.80	2250	.60	7570	.40	14420	.10	22070	.80	30220
.90	2400	.70	7790	.50	14690	.20	22360	.90	30530
7.00	2550	.80	8010	.60	14960	.30	22650	18.00	30840
.10	2710	.90	8230	.70	15230	.40	22910	.10	31150
.20	2870	10.00	8460	.80	15500	.50	23230	.20	31460
.30	3030	.10	8690						

DISCHARGE TABLE OF CHENANGO RIVER, AT BINGHAMTON, N. Y., FROM JUNE 13, 1911, TO DEC. 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
4.90	60	6.00	890	.10	2210	.10	3650	.10	5270
5.00	100	.10	1000	.20	2350	.20	3800	.20	5440
.10	150	.20	1110	.30	2490	.30	3960	.30	5610
.20	210	.30	1220	.40	2630	.40	4120	.40	5780
.30	280	.40	1330	.50	2770	.50	4280	.50	5950
.40	350	.50	1450	.60	2910	.60	4440	.60	6130
.50	430	.60	1570	.70	3050	.70	4600	.70	6310
.60	510	.70	1690	.80	3200	.80	4760	.80	6490
.70	600	.80	1820	.90	3350	.90	4930	.90	6670
.80	690	.90	1950	8.00	3500	9.00	5100	10.00	6850
.90	790	7.00	2080						

Note:—This table is not applicable to ice conditions. It is based on 4 discharge measurements made during the summer of 1911, measurement Nos. 49, 50, 51, 52.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHENANGO RIVER, AT BINGHAMTON, N. Y.

1901. Day.	AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.18	333	5.58	738	5.70	875	5.46	616	6.12	1391
2,	5.12	275	5.75	935	5.50	650	5.30	450	6.33	1664
3,	5.10	256	5.58	738	5.51	661	5.25	400	6.60	2025
4,	5.10	256	5.50	650	5.68	851	5.28	430	6.52	1913
5,	5.05	208	5.42	570	5.54	694	5.26	410	6.19	1482
6,	5.20	352	5.28	430	5.50	650	5.25	400	5.95	1175
7,	5.05	208	5.22	371	5.46	610	5.25	400	5.90	1115
8,	5.10	256	5.20	352	5.47	620	5.22	371	6.02	1261
9,	5.20	352	5.18	333	5.40	550	5.23	381	6.08	1339
10,	5.20	352	5.15	304	5.37	520	5.21	361	8.14	4325
11,	5.22	371	5.15	304	5.34	490	5.13	285	10.00	7500
12,	5.20	352	5.18	333	5.33	480	5.26	410	8.82	5360
13,	5.18	333	5.30	450	5.42	570	6.85	2375	------	5105
14,	5.12	275	5.48	630	6.47	1846	6.46	1833	8.48	4850
15,	5.15	304	5.35	500	6.40	1755	6.19	1482	19.54	27630
16,	6.35	1690	5.42	570	6.08	1339	6.11	1378	17.67	23145
17,	5.90	1115	5.55	705	5.89	1102	6.10	1365	12.61	12450
18,	5.60	760	5.62	782	5.85	1055	6.06	1313	9.41	6420
19,	5.48	630	5.55	705	5.80	995	6.06	1313	8.11	4250
20,	5.40	550	5.45	600	5.82	1019	6.00	1235	7.39	3200
21,	5.55	705	5.45	600	5.78	971	5.95	1175	6.84	2361
22,	5.58	738	5.30	450	5.75	935	5.95	1175	6.66	2109
23,	5.48	630	5.22	371	5.70	875	5.94	1163	7.26	2975
24,	6.70	2165	5.20	352	5.66	827	6.71	2180	8.18	4400
25,	6.20	1495	5.25	400	5.57	727	7.78	3800	7.41	3200
26,	5.65	815	5.24	391	5.48	630	7.18	2900	6.88	2420
27,	5.38	530	5.25	400	5.45	600	6.63	2067	6.83	2347
28,	5.30	450	------	352	5.39	540	6.05	1300	6.50	1885
29,	5.25	400	5.15	304	5.40	550	6.20	1495	6.52	1913
30,	5.20	352	5.88	1091	5.35	500	6.32	1651	7.20	2900
31,	5.20	352	------	------	5.39	540	------	------	7.36	3125

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHENANGO RIVER, AT BINGHAMTON, N. Y.

1902.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.62	2053	6.31	1638	18.75	25700	8.65	5105	6.54	1941	6.25	1560	8.58	5020	8.46	4775	5.58	738	7.28	3050	8.04	4175	6.54	1941
2,	6.64	2081	6.25	1560	22.75	35950	8.61	5020	6.32	1651	6.13	1404	7.88	3950	9.46	6510	5.54	694	7.26	2975	7.56	3425	6.48	1859
3,	6.74	2221	6.13	1404	21.65	33090	8.45	4775	6.22	1521	6.00	1235	7.39	3200	8.47	4775	5.56	716	6.68	2137	7.26	2975	6.68	2137
4,	6.91	2465	6.34	1677	17.35	22470	8.10	4250	6.22	1521	6.27	1586	7.43	3275	7.82	3800	5.48	630	6.28	1599	6.98	2570	7.24	2975
5,	6.64	2081	6.20	1495	12.80	12850	7.82	3800	6.22	1521	7.00	2600	7.13	2825	7.32	3050	5.46	610	6.04	1287	6.84	2361	7.14	2825
6,	6.61	2039	6.19	1482	9.98	7500	------	3650	6.12	1391	6.63	2067	7.46	3275	7.00	2600	5.44	590	6.28	1599	6.74	2221	6.74	2221
7,	6.52	1913	6.16	1443	9.25	6150	7.60	3500	6.12	1391	6.35	1690	8.20	4400	7.02	2630	5.48	630	6.56	1969	6.71	2179	6.61	2039
8,	6.30	1625	6.20	1495	9.02	5700	7.58	3500	6.12	1391	6.35	1690	8.00	4100	6.87	2405	5.46	610	6.44	1807	7.58	3500	6.51	1899
9,	6.22	1521	6.21	1508	8.68	5190	8.12	4250	6.12	1391	6.37	1716	7.80	3800	6.80	2305	5.48	630	6.46	1833	6.44	1807	6.26	1573
10,	6.12	1391	6.08	1339	9.45	6510	8.50	4850	6.00	1235	6.35	1690	7.88	3950	6.57	1983	5.86	1067	6.31	1638	6.34	1677	6.18	1469
11,	6.14	1417	6.10	1365	9.28	6240	8.98	5700	5.97	1199	6.20	1495	9.23	6150	6.52	1913	6.08	1339	6.14	1417	6.28	1599	6.56	1969
12,	6.02	1261	5.98	1211	11.60	10490	8.78	5360	5.92	1139	6.37	1716	8.40	4700	6.77	2263	5.81	1007	6.16	1443	6.24	1547	6.54	1941
13,	5.87	1079	5.90	1115	15.08	17610	8.48	4850	5.87	1079	6.30	1625	7.40	3200	6.72	2193	5.66	827	6.16	1443	6.48	1859	6.24	1547
14,	5.88	1091	5.84	1043	15.78	19080	8.22	4400	5.82	1019	6.35	1690	6.96	2540	6.40	1755	5.61	771	6.36	1703	6.41	1768	6.01	1248
15,	5.89	1103	5.77	959	14.18	15720	7.80	3800	5.77	959	6.25	1560	6.68	2137	6.24	1547	5.56	716	6.64	2081	6.31	1638	6.11	1378
16,	5.91	1127	5.86	1067	11.98	11250	7.42	3200	5.72	899	6.23	1534	6.56	1969	6.22	1521	5.46	610	6.31	1638	6.16	1443	6.04	1287
17,	5.88	1091	5.76	947	15.86	19185	7.18	2900	5.74	923	6.25	1560	6.56	1969	6.10	1365	5.41	560	6.11	1378	6.11	1378	10.53	8495
18,	5.76	947	5.78	971	15.72	18870	7.05	2675	5.72	899	6.15	1430	6.48	1859	6.04	1287	5.36	510	6.01	1248	6.08	1339	10.94	9255
19,	5.78	971	5.74	923	13.10	13450	6.90	2450	5.62	782	6.05	1300	6.80	2305	6.00	1235	5.36	510	5.96	1187	6.06	1313	9.91	7320
20,	5.78	971	5.71	887	10.48	8400	6.80	2305	5.77	959	6.05	1300	11.36	10015	6.00	1235	5.31	460	6.81	2319	6.11	1378	9.08	5880
21,	5.66	827	5.64	804	9.40	6420	6.72	2193	6.05	1300	6.03	1274	15.02	17400	5.71	887	5.28	430	6.86	2390	6.06	1313	8.51	4850
22,	6.02	1261	5.67	839	9.20	6060	6.64	2081	5.93	1151	6.28	1599	15.02	17400	6.00	1235	5.26	410	6.51	1899	6.08	1339	12.84	12950
23,	8.24	4475	5.68	851	9.32	6240	6.52	1913	5.83	1031	6.33	1664	13.52	14250	5.91	1127	5.31	460	6.34	1677	6.08	1339	14.03	15405
24,	8.66	5105	5.68	827	9.38	6420	6.40	1755	5.77	959	6.16	1443	12.34	11950	5.88	1091	5.28	430	6.31	1638	6.16	1443	11.28	9920
25,	7.62	3500	5.68	851	8.95	5615	6.32	1651	6.00	1235	6.00	1235	11.47	10205	5.84	1043	5.31	460	6.31	1638	6.21	1508	9.31	6240
26,	6.86	2390	5.73	911	8.48	4850	6.20	1495	6.35	1690	6.06	1313	9.62	6780	5.81	1007	5.54	694	6.21	1508	6.28	1599	8.71	5190
27,	6.86	2390	6.08	1339	8.15	4325	6.20	1495	6.63	2067	6.18	1469	8.62	5020	5.71	887	5.76	947	6.16	1443	6.78	2277	8.24	4475
28,	7.28	3050	8.92	5530	8.15	4325	6.14	1417	6.35	1690	6.16	1443	11.62	10490	5.78	971	5.66	827	9.30	6240	7.06	2675	7.64	3575
29,	7.39	3200	------	------	8.95	5615	6.14	1417	6.25	1560	6.73	2207	9.70	6960	5.74	923	7.64	3575	11.71	10680	6.78	2277	7.24	2975
30,	6.85	2375	------	------	9.28	6240	6.30	1625	6.23	1534	10.56	8495	8.62	5020	5.74	923	6.44	1807	10.41	[illegible]	6.61	2039	7.28	3050
31,	6.40	1755	------	------	8.98	5700	------	------	6.20	1495	------	------	9.30	6240	5.66	827	------	------	8.96	[illegible]	------	------	6.98	2570

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHENANGO RIVER, AT BINGHAMTON, N. Y.

1903.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.76	2249	12.04	11350	16.49	20600	10.14	7770	5.81	1007	5.06	217	6.59	2011	5.57	727	10.01	7500	5:51	661	6.88	2420	6.22	1521
2,	6.64	2081	10.61	8590	14.34	16035	9.14	5970	5.76	947	5.11	265	6.42	1781	5.52	672	8.66	5105	5.56	716	6.72	2193	6.08	1339
3,	7.21	2900	10.56	8495	11.18	9730	8.56	4935	5.74	923	5.11	265	6.12	1391	5.45	600	7.83	3875	5.81	1007	6.68	2137	6.20	1495
4,	8.78	5360	11.94	11155	9.71	6960	8.51	4850	5.71	887	5.06	217	5.97	1199	5.45	600	7.29	3050	5.83	1031	6.55	1955	6.20	1495
5,	8.64	5105	13.38	14050	9.06	5790	8.24	4475	5.68	851	5.06	217	5.89	1103	6.57	1983	6.96	2540	5.83	1031	6.50	1885	6.15	1430
6,	7.96	4025	11.46	10205	10.14	7770	7.78	3800	5.64	804	5.06	217	5.82	1019	6.49	1872	6.66	2109	7.33	3125	6.92	2480	6.12	1391
7,	7.34	3125	9.81	7140	10.01	7500	7.66	3575	5.61	771	4.94	103	5.85	1055	6.47	1846	6.46	1833	6.71	2179	6.82	2333	6.08	1339
8,	7.24	2975	8.54	4935	10.08	7680	8.76	5275	5.58	738	5.24	390	5.77	959	6.32	1651	6.31	1638	6.66	2109	6.58	1997	6.05	1300
9,	6.98	2570	8.16	4325	14.68	16770	9.11	5880	5.56	716	5.11	265	5.67	839	5.99	1223	6.19	1482	11.94	11155	6.48	1859	6.05	1300
10,	9.56	6690	7.84	3875	14.28	15930	8.54	4935	5.56	716	5.06	217	5.57	727	6.22	1521	6.13	1404	19.06	26420	6.40	1755	5.90	1115
11,	9.34	6330	7.76	3725	15.26	17925	8.18	4400	5.56	716	5.11	265	5.47	620	6.52	1913	6.36	1703	19.91	28540	6.40	1755	5.90	1115
12,	9.36	6330	9.01	5700	15.24	17925	7.81	3800	5.51	661	5.71	887	5.47	620	6.27	1586	6.49	1872	15.48	18450	6.32	1651	6.00	1235
13,	9.26	6150	10.24	7950	13.16	13550	7.51	3350	5.51	661	7.97	4025	5.42	570	6.27	1586	6.19	1482	11.42	10110	6.25	1560	6.30	1625
14,	9.08	5880	9.28	6240	11.31	9020	7.26	2975	5.48	630	6.62	2053	5.42	570	6.07	1326	6.03	1274	9.45	6510	6.22	1521	6.35	1690
15,	9.14	5970	8.21	4400	10.26	7950	7.48	3350	5.46	610	6.29	1612	5.42	570	5.95	1175	5.93	1151	8.58	5020	6.15	1430	6.15	1430
16,	9.14	5970	7.84	3875	9.56	6690	7.41	3200	5.46	610	6.12	1391	5.49	640	5.79	983	5.89	1103	7.95	4025	6.15	1430	6.10	1365
17,	8.96	5615	7.24	2975	9.08	5880	7.21	2900	5.46	610	5.92	1139	5.57	727	5.69	863	5.86	1067	7.78	3800	9.03	5790	6.10	1365
18,	8.54	4935	6.44	1807	9.14	5970	6.98	2570	5.41	560	5.72	899	5.49	640	5.69	863	6.21	1508	11.55	10395	10.10	7680	6.05	1300
19,	7.80	3875	6.68	2137	8.78	5360	6.76	2249	5.38	530	5.75	935	5.72	899	5.59	749	6.23	1534	11.72	10680	8.50	4850	5.92	1139
20,	7.78	3200	6.71	2179	8.36	4625	6.56	1969	5.36	510	5.82	1019	5.89	1103	7.07	2675	5.99	1223	10.20	7860	7.42	3200	5.98	1211
21,	7.74	3725	6.88	2420	8.16	4325	6.44	1807	5.36	510	6.62	2053	5.79	983	6.86	2390	5.89	1103	9.08	5880	6.92	2480	7.35	3125
22,	9.84	7230	6.81	2319	9.48	6600	6.36	1703	5.34	490	8.67	5105	5.87	1079	6.29	1612	5.81	1007	8.40	4700	6.75	2235	8.35	4625
23,	9.86	7230	6.91	2465	11.38	10110	6.31	1638	5.26	410	8.19	4400	6.67	2123	5.99	1223	5.71	887	7.88	3950	6.72	2193	8.10	4250
24,	8.71	5190	6.76	2249	15.73	18975	6.24	1547	5.26	410	8.99	5700	7.15	2825	5.79	983	5.69	863	7.72	3650	6.85	2375	7.48	3350
25,	7.98	4100	6.68	2137	14.96	17295	6.11	1378	5.26	410	8.32	4550	6.09	1352	5.79	983	5.66	827	7.55	3425	6.78	2277	7.35	3125
26,	7.96	4025	6.64	2081	12.56	12350	6.11	1378	5.21	362	7.87	3875	5.77	959	7.63	3575	5.61	772	7.25	2975	6.40	1755	7.18	2900
27,	7.66	3575	6.56	1969	10.54	8495	6.04	1287	5.21	362	7.27	2975	5.65	815	7.59	3500	5.56	716	7.15	2825	6.32	1651	6.92	2480
28,	7.71	3650	9.96	7410	9.54	6690	5.90	1187	5.21	362	6.77	2263	5.57	727	6.89	2435	5.61	772	7.10	2750	6.38	1729	6.48	1859
29,	8.74	5275	-----	-----	9.16	5970	5.88	1091	5.24	390	6.69	2151	5.57	727	14.61	16500	5.59	749	7.20	2900	6.18	1469	6.48	1859
30,	13.31	13850	-----	-----	8.61	5020	5.86	1067	5.21	362	6.89	2435	5.65	815	14.36	16035	5.59	749	7.18	2900	6.20	1495	6.50	1885
31,	13.74	14775	-----	-----	9.78	7140	-----	-----	5.16	314	-----	-----	5.59	749	12.11	11470	-----	-----	7.10	2750	-----	-----	6.45	1820

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHENANGO RIVER, AT BINGHAMTON, N. Y.

1904.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.42	1781	7.22	3050	7.60	3500	11.30	9920	8.72	5190	7.14	2825	5.59	749	6.10	1365	5.70	875	7.60	3650	6.22	1521	6.15	1430
2,	6.55	1955	7.20	2900	7.40	3200	12.90	13051	8.19	4400	6.79	2291	5.73	911	7.08	2750	5.72	899	6.85	2375	6.20	1495	5.95	1175
3,	6.42	1781	7.18	2900	7.88	3950	*11.70	10680	7.79	3800	6.56	1969	5.63	793	7.35	3125	5.70	875	6.41	1768	6.12	1391	5.80	995
4,	6.45	1820	7.20	2900	10.38	5750	10.50	8400	7.42	3200	6.42	1781	5.61	771	6.88	2420	5.72	899	6.21	1508	6.07	1326	5.75	935
5,	6.68	2137	7.05	2075	11.92	9000	9.45	6510	7.19	2900	6.64	2081	5.51	661	6.32	1651	5.65	815	6.11	1378	6.04	1287	5.65	818
6,	6.82	2333	6.75	2235	11.08	8500	10.08	7680	6.99	2585	6.59	2011	5.49	640	6.72	2193	5.65	815	6.01	1248	6.17	1456	5.72	899
7,	6.68	2137	8.12	4250	10.95	8300	10.30	8046	6.82	2333	6.34	1677	5.51	661	6.65	2095	5.60	760	6.01	1248	6.23	1534	5.80	995
8,	6.60	2028	13.92	15090	14.78	8085	10.88	9160	6.67	2123	6.25	1560	5.58	738	6.28	1599	5.52	672	5.96	1187	6.16	1443	5.75	935
9,	6.58	1997	15.30	18030	16.90	11400	11.01	9350	6.55	1955	6.88	2420	5.48	630	6.10	1365	5.50	650	5.88	1091	6.11	1378	5.62	783
10	6.48	1859	14.28	15930	15.65	10700	12.97	13150	6.44	1807	7.98	4100	5.40	550	6.02	1261	5.50	650	5.80	995	6.11	1378	5.55	705
11.	6.38	1729	12.05	11350	13.70	8050	12.42	12050	6.34	1677	6.93	2495	5.30	450	5.98	1211	5.40	550	6.05	1300	6.06	1313	5.58	738
12,	6.30	1625	10.60	8590	11.40	6070	10.84	9067	6.20	1573	6.48	1859	5.50	650	5.92	1139	5.31	460	7.60	3500	6.06	1313	5.62	783
13,	6.25	1560	9.50	6600	10.30	5700	9.91	7320	6.18	1469	6.25	1560	5.55	705	5.85	1055	5.31	460	8.95	5615	6.01	1248	5.70	875
14.	6.20	1495	8.70	5190	9.52	4950	9.29	6249	6.14	1417	6.15	1430	5.35	500	5.75	935	5.34	490	7.85	3875	6.02	1261	5.55	705
15,	6.15	1430	8.20	4400	8.75	4170	8.74	5275	6.26	1573	6.08	1339	5.40	550	5.72	809	6.09	1352	7.03	2675	5.95	1175	5.65	818
16,	6.15	1430	9.38	6420	8.20	3600	8.49	4850	7.36	3125	6.53	1927	5.60	760	5.65	815	5.91	1127	6.40	1755	6.08	1339	5.65	818
17,	6.12	1391	10.18	7860	7.65	3020	8.39	4700	7.36	3125	6.11	1378	5.65	815	5.70	875	5.67	839	6.42	1781	6.10	1365	5.65	818
18,	6.15	1430	10.05	7590	7.42	2800	8.39	4700	6.84	2361	5.94	1163	6.68	2137	5.62	782	5.54	694	6.26	1573	5.95	1175	5.65	818
19,	6.30	1625	9.52	6600	7.22	2680	8.40	4700	6.64	2081	5.84	1043	6.55	1955	5.55	705	5.40	550	6.16	1443	5.92	1139	5.60	760
20,	6.45	1820	8.98	5700	7.48	3015	8.23	4475	7.30	3050	5.84	1043	6.08	1339	5.78	971	5.36	510	6.12	1391	5.90	1115	5.60	760
21,	6.30	1625	8.62	5020	7.88	3555	7.98	4100	7.10	2750	5.84	1043	5.88	1091	6.82	2333	5.46	610	5.79	983	6.08	1339	5.60	760
22,	6.30	1625	8.35	4625	7.78	3350	7.98	4100	6.70	2165	5.82	1019	5.82	1019	6.50	1885	5.68	851	10.79	8970	6.80	2305	5.60	760
23,	10.36	8130	8.62	5020	11.30	9920	8.00	4100	6.47	1846	5.72	899	5.65	815	8.25	4475	5.66	827	9.76	7050	6.68	2137	5.65	818
24,	11.18	9730	9.35	6330	15.15	17715	7.93	4025	6.73	2207	5.60	760	6.10	1365	7.55	2425	5.56	716	8.15	4325	6.50	1885	5.92	1139
25,	11.60	10490	9.38	6420	15.90	19290	8.13	4325	6.47	1846	5.54	694	6.02	1261	6.65	2095	6.70	2165	7.38	3200	6.38	1729	6.50	1885
26,	10.20	7860	8.70	5190	19.82	28280	8.43	4775	6.40	1755	5.54	694	5.92	1139	6.32	1651	6.42	1781	7.41	3200	6.32	1651	6.25	1560
27,	9.35	6330	8.25	4475	19.90	28540	8.13	4325	6.50	1885	5.47	620	6.20	1495	6.20	1495	6.29	1612	7.23	2975	6.18	1469	6.72	2193
28,	8.65	5105	7.95	4025	16.15	19830	10.13	7770	6.50	1885	5.46	610	6.22	1521	*6.05	1300	6.15	1430	6.92	2480	5.98	1211	12.75	12750
29,	8.10	4250	7.88	3950	12.08	11450	10.19	7865	6.40	1775	5.46	610	6.65	2095	5.90	1115	5.95	1175	6.68	2137	5.80	995	13.28	13810
30,	7.88	3950	------	------	10.62	8590	9.39	6420	6.26	1573	5.49	640	6.90	2450	5.80	995		2480	6.53	1927	6.20	1495	10.15	7770
31,	7.60	3500	------	------	10.58	8590	------	------	6.76	2249	------	------	6.32	1651	5.72	899	------	------	6.32	1651	------	------	5.25	401

*Interpolated.

Note:—The daily discharge during January, February and March is only approximate, owing to the ice conditions. From March 4 to 22, 1904, the discharge was estimated from the measurement of March 8, which was approximately 50 per cent. of normal conditions. This was due to an ice gorge.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHENANGO RIVER, AT BINGHAMTON, N. Y.

1905.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	8.32	4580	6.2	------	5.37	------	12.56	12370	6.55	1955	5.65	820	6.12	1390	6.82	2330	8.05	4180	5.95	1180	6.38	1730	8.78	5330
2,	8.45	4780	6.23	------	5.57	------	10.68	8740	6.43	1790	5.55	705	6.28	1600	6.75	2240	7.12	2780	5.88	1090	6.8	2305	7.28	3020
3,	8.85	5450	6.07	------	5.49	------	9.44	6490	6.38	1730	5.58	640	6.75	2240	6.15	1430	7.42	3230	6.38	1730	6.48	1860	12.92	13100
4,	7.09	2740	5.97	------	5.41	------	8.76	5290	6.31	1640	5.6	760	6.6	2025	5.98	1210	10.92	9200	7.12	2780	6.35	1690	14.70	16770
5,	6.82	2330	5.93	------	5.47	------	10.36	8150	6.23	1530	5.62	780	6.38	1730	5.82	1020	14.72	16810	6.5	1885	6.28	1600	11.55	10400
6,	6.92	2480	5.93	------	5.39	------	10.96	9270	6.55	1955	8.15	4330	6.35	1690	5.72	900	13.1	13450	6.22	1520	6.25	1560	9.42	6460
7,	9.39	6400	5.9	------	5.57	------	10.86	9080	6.51	1900	7.22	2930	6.12	1390	5.72	900	9.9	7320	6.05	1300	7.65	3580	8.55	4940
8,	10.55	8500	5.87	------	5.47	------	10.0	7500	6.42	1780	6.88	2420	6.1	1365	6.12	1390	8.62	5050	5.95	1180	7.25	2980	8.18	4370
9,	9.12	5920	5.77	------	5.46	------	9.1	5880	6.27	1590	6.68	2140	6.02	1260	5.88	1090	7.78	3770	5.88	1090	7.22	2930	7.90	3950
10,	8.22	4430	5.72	------	5.56	------	8.63	5070	6.32	1650	6.3	1625	5.92	1140	5.75	940	7.22	2930	5.85	1055	6.98	2570	7.78	3770
11,	7.42	3230	5.74	------	5.7	------	8.8	5360	6.17	1460	6.1	1365	5.82	1020	5.7	875	6.88	2420	5.88	1090	6.82	2330	7.50	3350
12,	7.20	2990	5.66	------	5.66	------	9.67	6900	6.12	1390	6.3	1625	5.75	940	5.8	995	9.85	7230	9.65	6870	6.75	2240	7.22	2930
13,	7.98	4070	5.72	------	5.63	------	9.13	5930	6.1	1365	6.2	1495	5.72	900	6.18	1470	8.98	5670	9.22	6100	6.65	2100	7.12	2780
14,	7.98	4070	5.86	------	5.76	------	8.37	4660	6.07	1330	6.3	1625	5.85	1060	6.15	1430	7.98	4070	7.68	3620	6.65	2100	6.95	2530
15,	7.18	2870	5.74	------	5.63	------	8.05	4180	6.27	1590	6.02	1260	5.98	1210	5.95	1180	7.18	2870	7.15	2830	6.58	2000	6.58	2000
16,	6.91	2470	6.25	------	5.76	------	8.07	4210	6.3	1625	5.85	1060	6.48	1860	6.42	1780	6.92	2480	6.85	2380	6.5	1885	6.12	1391
17,	6.74	2220	5.68	------	5.5	------	7.8	3800	6.21	1510	5.78	970	6.1	1365	7.38	3170	6.9	2450	6.65	2100	6.38	1730	6.18	1470
18,	6.58	2000	5.6	------	5.78	------	7.69	3640	6.25	1560	6.02	1260	5.92	1140	7.0	2600	8.08	4220	6.52	1910	6.3	1625	6.25	1560
19,	6.74	2120	5.65	------	8.87	------	7.49	3340	6.28	1600	6.90	2450	5.82	1020	6.35	1690	8.58	4990	7.08	2720	6.22	1520	6.32	1650
20,	6.46	1830	5.6	------	12.42	12090	7.22	2930	6.28	1600	7.05	2680	5.8	995	6.08	1340	7.78	3770	7.55	3430	6.12	1390	6.32	1650
21,	6.34	1680	5.6	------	13.55	14360	7.74	3710	6.1	1365	6.95	2530	5.72	900	5.95	1180	8.12	4280	7.45	3280	5.98	1210	6.68	2140
22,	6.34	1680	5.5	------	12.79	12830	8.86	5460	6.0	1235	12.32	11890	5.65	820	5.9	1115	7.68	3620	6.95	2530	5.92	1140	9.42	6460
23,	6.18	1470	5.52	------	12.17	11590	8.04	4160	5.92	1140	11.15	9640	5.58	738	5.85	1060	7.02	2630	6.8	2305	5.9	1115	9.35	6330
24,	6.04	1290	5.4	------	11.97	10190	7.54	3410	5.85	1060	9.12	5920	6.88	2420	5.72	900	6.7	2165	6.68	2150	5.85	1055	8.40	4700
25,	6.36	1700	5.48	------	16.45	20490	7.19	2890	5.75	940	7.78	3770	6.72	2190	5.55	710	6.48	1860	6.58	2010	5.9	1115	7.58	3470
26,	6.61	------	5.25	------	18.45	25000	6.99	2590	5.75	940	7.1	2750	6.12	1390	5.52	670	6.35	1690	6.48	1860	5.98	1210	7.38	3170
27,	6.5	------	5.54	------	17.55	22940	6.84	2360	6.08	1340	6.95	2530	5.82	1020	5.48	630	6.2	1495	6.32	1650	5.85	1055	7.08	2720
28,	6.55	------	5.47	------	17.22	22180	6.65	2100	6.02	1260	6.75	2240	5.7	875	5.45	600	6.1	1365	6.25	1560	5.9	1115	6.85	2380
29,	6.65	------	------	------	15.54	18530	6.53	1927	5.88	1090	6.52	1910	5.65	820	5.45	600	6.05	1300	6.18	1470	7.95	4030	7.12	2780
30,	6.63	------	------	------	14.21	15740	6.73	2210	5.75	940	6.30	1625	5.75	940	5.48	630	6.0	1235	6.12	1390	10.8	8970	8.95	5620
31,	6.33	------	------	------	13.81	14900	------	------	5.7	875	------	------	6.82	2330	7.58	3470	------	------	6.08	1340	------	------	8.12	4280

Note:—During the entire frozen period there was an open channel of varying width at the gage. From January 26 to February 20, approximately, the river was frozen entirely across a short distance below the gage. The ice finally broke up March 18. Gage heights interpolated November 15 to 18, inclusive.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHENANGO RIVER, AT BINGHAMTON, N. Y.

1906.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	7.65	3460	6.88	2300	5.99	1100	11.36	10030	6.32	1520	7.25	2840	7.23	2810	5.58	650	5.5	570	5.28	380	6.68	2010	6.5	1760
2,	7.32	2940	6.6	1900	6.22	1390	9.74	7040	6.22	1390	6.88	2300	7.36	3000	5.5	570	5.4	480	5.28	380	6.55	1830	6.55	1830
3,	6.92	2350	5.82	900	6.19	1350	8.81	5410	8.22	4390	6.58	1870	6.76	2120	5.5	570	5.4	480	5.28	380	6.38	1600	6.48	1730
4,	7.1	2620	6.02	1140	11.02	9390	8.71	5230	8.56	4970	6.43	1670	6.46	1710	5.68	750	5.5	570	5.28	380	6.25	1430	5.92	1010
5,	8.1	4180	6.22	1390	12.47	12190	10.23	7910	7.64	3440	6.25	1430	6.33	1530	6.2	1360	5.42	500	5.3	396	6.18	1340	5.8	875
6,	7.78	3660	6.12	1260	9.09	5900	11.07	9480	7.52	3250	7.13	2660	6.21	1370	5.9	990	5.42	500	5.28	380	6.12	1260	6.78	2150
7,	7.15	2690	6.0	1110	7.62	3410	9.9	7320	7.26	2860	7.20	2765	6.01	1120	6.2	1360	5.4	480	5.25	355	6.02	1140	10.05	7590
8,	7.0	2470	6.02	1140	5.72	790	9.07	5860	6.96	2410	6.84	2240	5.93	1030	6.02	1140	5.3	396	5.72	800	5.9	990	7.48	3190
9,	6.52	1790	5.92	1010	6.92	2350	8.73	5270	6.76	2120	6.34	1540	5.89	980	5.82	900	5.28	380	5.65	720	5.88	970	6.98	2440
10,	6.3	1490	5.95	1050	6.72	2070	10.37	8170	6.94	2380	6.72	2070	6.76	2120	5.45	530	5.15	280	5.58	650	5.82	900	7.25	2840
11,	6.4	1620	5.95	1050	6.47	1720	12.9	13250	6.76	2120	7.07	2570	7.31	2930	5.62	690	5.2	315	5.6	665	5.8	875	7.48	3190
12,	6.5	1760	5.98	1090	6.39	1610	11.83	10930	6.56	1840	7.27	2870	7.03	2510	5.72	790	5.2	315	5.75	820	6.28	1460	7.12	2650
13,	6.5	1760	5.88	970	6.27	1450	10.45	8310	6.49	1750	6.57	1860	6.53	1800	5.75	820	5.0	175	5.6	665	6.22	1390	6.85	2250
14,	6.6	1900	5.95	1050	6.19	1350	9.75	7050	6.99	2460	6.24	1410	6.26	1440	5.58	650	5.12	260	5.6	665	6.22	1390	6.88	2300
15,	6.5	1760	5.82	900	6.08	1210	12.07	11390	7.06	2560	6.12	1260	6.09	1220	5.52	590	5.25	360	5.5	570	6.1	1235	6.9	2325
16,	6.45	1690	5.82	900	6.04	1160	13.03	13310	6.46	1710	6.22	1390	5.96	1070	5.42	500	5.22	330	5.48	550	6.08	1210	10.4	8220
17,	6.62	1930	5.8	875	5.98	1090	11.3	9920	6.38	1600	6.57	1860	5.93	1030	5.42	500	5.05	210	5.42	500	6.0	1110	9.6	6790
18,	6.6	1900	5.75	820	5.94	1040	9.6	6790	6.68	2010	7.17	2720	6.01	1120	5.38	460	5:08	230	5.32	410	6.18	1340	8.35	4610
19,	6.5	1760	5.8	875	5.91	1000	8.73	5270	6.63	1940	7.97	3970	5.93	1030	5.3	396	4.95	145	5.3	396	9.12	5950	7.05	2540
20,	6.4	1620	5.75	820	5.71	776	8.17	4300	6.33	1530	7.94	3921	5.88	970	5.3	396	5.0	175	8.7	5220	9.2	6090	6.7	2040
21,	6.68	2010	5.87	960	5.98	1090	7.73	3580	6.21	1370	7.27	2870	5.9	990	5.82	900	5.3	396	8.3	4525	8.5	4865	6.9	2325
22,	8.9	5560	8.25	4440	6.06	1180	7.6	3375	6.05	1170	6.87	2280	5.8	875	6.18	1340	5.4	480	7.5	3220	8.38	4660	7.1	2615
23,	11.5	10300	9.02	5780	5.96	1060	7.65	3460	5.95	1050	6.54	1820	5.68	750	5.8	875	5.32	410	6.85	2250	8.25	4440	6.8	2180
24,	13.45	14200	8.29	4510	5.91	1000	7.4	3065	5.93	1030	6.40	1625	5.65	720	5.8	875	5.38	460	6.48	1730	7.42	3100	6.25	1430
25,	11.65	10580	8.35	4610	5.81	890	7.03	2510	5.88	967	6.24	1410	5.58	650	5.52	590	5.48	550	6.42	1650	7.05	2540	6.0	1110
26,	9.35	6350	8.89	5550	5.78	850	6.79	2170	6.33	1530	6.12	1200	5.5	570	5.4	480	5.38	460	6.58	1870	6.85	2250	6.05	1170
27,	8.3	4520	7.99	4000	6.84	2240	6.59	1890	8.85	5480	6.02	1140	5.48	550	5.5	570	5.32	410	6.35	1560	6.7	2040	6.2	1360
28,	7.75	3620	6.37	1580	13.41	14100	6.52	1790	11.78	10800	5.93	1030	5.48	550	6.15	1300	5.3	396	6.52	1790	6.7	2040	6.25	1430
29,	7.32	2940	------	------	12.66	12570	6.32	1520	10.98	9310	6.06	1190	5.45	525	6.15	1300	5.28	380	6.55	1830	6.7	2040	6.3	1490
30,	6.88	2300	------	------	10.51	8420	6.26	1440	8.93	5620	6.11	1250	5.5	570	5.82	900	5.2	315	6.48	1730	6.6	1900	6.3	1490
31,	6.95	2400	------	------	13.08	13410	------	------	7.83	3740	------	------	5.55	620	5.7	765	------	------	6.52	1790	------	------	8.5	4865

Note:—River seldom freezes over at the gage, but there was considerable needle ice during January, February and part of December.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHENANGO RIVER, AT BINGHAMTON, N. Y.

1907.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	12.65	12550	6.15	1280	5.4	460	8.15	4270	9.7	6960	6.05	1140	6.1	1210	5.6	645	5.0	170	6.45	1690	6.8	2180	6.55	1830
2,	12.55	12350	6.15	1280	5.4	460	7.5	3220	9.7	6960	6.05	1140	6.2	1345	5.55	600	4.95	142	6.1	1210	6.6	1895	6.45	1690
3,	9.7	6965	6.3	1480	5.3	380	7.35	2990	8.45	4780	6.15	1280	6.5	1760	5.6	645	5.0	170	6.0	1080	8.55	4950	6.35	1550
4,	11.85	10970	6.85	2250	5.35	420	7.1	2615	8.35	4610	6.1	1210	6.0	1080	5.7	745	5.15	270	6.3	1480	8.95	5650	6.35	1550
5,	13.8	14900	6.05	1150	5.45	500	7.0	2470	8.0	4020	6.05	1140	5.85	900	5.55	600	6.0	1080	8.75	5300	8.15	4270	6.0	1080
6,	11.0	9350	6.0	1080	5.3	380	6.95	2400	7.55	3300	6.1	1210	5.65	700	5.5	550	6.1	1210	8.05	4100	7.65	3460	6.2	1345
7,	9.7	6965	6.2	1345	5.55	600	6.8	2180	7.45	3140	6.5	1755	5.6	645	5.4	460	6.05	1150	7.9	3855	12.65	12550	6.05	1150
8,	10.2	7860	5.95	1020	5.30	380	6.6	1895	8.2	4355	6.75	2110	5.5	550	5.3	380	5.85	900	9.25	6180	13.35	14000	6.05	1150
9,	10.8	8970	5.85	910	5.30	380	6.85	2250	7.85	3780	6.7	2035	5.45	500	5.25	340	5.45	500	10.65	8680	11.70	10680	6.2	1345
10,	9.5	6615	5.7	745	5.35	420	7.05	2540	7.7	3535	6.6	1895	5.4	460	5.25	340	5.8	850	9.3	6265	10.30	8040	13.5	14250
11,	8.4	4695	5.6	645	5.4	460	7.2	2765	7.45	3140	6.3	1480	5.38	444	5.3	380	9.1	5915	8.1	4185	8.95	5650	16.0	19500
12,	7.9	3855	6.1	1210	5.4	460	7.15	2690	7.2	2765	6.05	1140	6.4	1615	5.3	380	9.95	7410	8.5	4865	8.30	4525	13.5	14250
13,	7.45	3140	5.9	960	5.35	420	7.2	2765	6.9	2325	6.0	1080	6.5	1760	5.25	340	8.45	4780	8.35	4610	7.80	3695	10.2	7860
14,	7.45	3140	5.7	745	5.5	550	7.2	2765	6.8	2180	5.9	960	6.3	1480	5.2	305	6.7	2035	7.65	3460	7.50	3220	8.95	5650
15,	8.0	4020	5.9	960	7.05	2540	7.05	2540	6.65	1970	5.85	910	5.9	960	5.1	235	6.4	1615	7.35	2990	7.15	2690	8.5	4865
16,	7.55	3300	5.65	700	10.15	7770	6.9	2325	6.7	2035	5.8	850	5.75	800	5.15	270	6.1	1210	6.95	2400	6.9	2325	8.25	4440
17,	6.5	1755	6.15	1280	10.35	8130	6.95	2400	6.7	2035	5.8	850	5.5	550	5.15	270	6.0	1080	6.75	2110	6.8	2180	7.95	3940
18,	6.5	1755	5.7	745	10.55	8500	6.95	2400	6.65	1970	5.7	745	5.55	600	5.2	305	5.8	850	6.6	1895	6.6	1895	7.65	3470
19,	6.9	2325	5.6	645	10.7	8780	6.85	2250	6.65	1970	5.65	700	5.6	645	5.2	305	5.7	745	6.45	1690	6.65	1970	7.4	3065
20,	9.9	7320	6.2	1345	9.15	6000	6.75	2100	6.7	2035	5.65	700	5.6	645	5.1	235	5.7	745	6.35	1550	6.6	1895	7.0	2470
21,	10.2	7860	5.6	645	7.9	3855	6.6	1895	6.5	1755	5.6	645	5.65	700	5.15	270	5.7	745	6.6	1895	6.5	1755	7.2	2765
22,	7.8	3695	5.75	800	8.4	4695	6.45	1680	6.3	1480	5.65	700	5.65	700	5.1	235	6.15	1280	6.6	1895	6.55	1830	6.9	2325
23,	6.4	1615	5.5	550	11.9	11100	6.45	1680	6.2	1345	5.65	700	5.55	600	5.1	235	5.95	1020	6.4	1615	6.45	1690	8.3	4525
24,	6.2	1340	5.5	550	12.7	12700	7.25	2840	6.15	1280	5.6	645	5.6	645	5.05	200	6.0	1080	6.25	1410	6.35	1550	14.1	15510
25,	6.3	1480	5.4	460	11.75	10800	9.9	7320	6.05	1140	5.5	550	5.8	850	5.05	200	6.05	1150	6.1	1210	6.35	1550	13.65	14570
26,	6.5	1755	5.45	500	10.45	8310	9.25	6180	6.3	1480	5.35	490	6.5	1755	5.0	170	6.05	1150	6.05	1150	6.4	1615	10.75	8890
27,	6.3	1480	5.5	550	9.55	6700	11.9	11100	6.85	2250	5.4	460	6.35	1550	5.05	200	5.9	960	6.0	1080	6.4	1615	9.30	6965
28,	6.4	1615	5.4	460	9.8	7140	10.05	7590	7.05	2540	5.65	700	6.05	1150	5.05	200	5.85	900	7.2	2765	6.4	1615	9.55	6700
29,	6.5	1755	------	------	10.8	8970	9.7	6965	6.6	1895	5.5	550	5.6	645	5.0	170	5.8	850	9.0	5740	6.65	1970	11.05	9450
30,	6.35	1550	------	------	10.1	7080	8.65	5130	6.3	1480	5.6	645	5.6	615	4.95	142	6.35	1550	8.2	4355	6.65	1970	9.8	7140
31.	6.25	1410	------	------	-----	------	------	------	6.2	1345	-----	------	5.55	600	5.0	170			7.2	2765			10.25	7950

Note:—Ice conditions at this station largely in the form of anchor ice obstruction. Portions of January to March and December, 1907, liable to error from this cause.

Discharge mean of February, 1907, corrected ten per cent. on account of probable backwater effect from ice. (See "Estimated Monthly Discharge" for 1907.)

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHENANGO RIVER, AT BINGHAMTON, N. Y.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	8.95	5650	5.8	759	6.4	1620	10.2	7860	9.55	6700	6.85	2250	5.25	340	5.2	305	4.95	140	4.95	140	5.3	380	5.25	------
2,	8.15	4270	6.0	759	6.75	2110	9.9	7320	9.65	6880	6.5	1755	5.2	305	5.05	200	5.0	170	5.0	170	5.35	420	5.3	------
3,	7.6	3380	6.45	759	8.0	4020	9.1	5915	9.45	6530	6.2	1345	5.25	340	5.25	340	4.95	140	4.95	140	5.3	380	4.9	------
4,	7.15	2690	5.9	759	8.4	4695	8.5	4865	8.95	5650	6.05	1150	5.35	420	5.25	340	4.95	140	4.9	115	5.35	420	5.2	------
5,	7.05	2540	6.3	759	7.7	3535	8.2	4355	8.05	4100	5.95	1020	5.2	305	5.15	270	4.95	140	4.95	140	5.25	340	5.2	------
6,	6.4	1615	6.0	759	7.2	2765	8.55	4950	7.5	3220	5.9	960	5.2	305	5.25	340	5.05	202	4.95	140	5.2	305	4.85	------
7,	6.35	1550	6.0	759	7.1	2615	8.35	5480	8.3	4525	5.85	910	5.2	305	5.25	340	5.05	202	4.95	140	5.2	305	5.2	------
8,	6.5	1755	6.0	759	6.9	2325	8.4	4695	11.5	10300	5.65	700	5.2	305	5.35	420	5.05	202	4.95	140	4.9	115	5.2	------
9,	6.7	2035	6.1	759	6.75	2110	10.95	9260	11.2	9730	5.75	800	5.35	420	4.95	140	5.05	202	4.95	140	5.3	380	5.3	------
10,	6.6	1895	6.0	759	6.65	1970	10.1	7680	10.8	8970	5.85	910	5.3	380	5.3	380	5.05	202	4.95	140	5.4	460	5.25	------
11,	6.4	1615	6.0	759	6.55	1830	9.3	6265	9.65	6880	5.95	1020	5.25	340	5.25	340	5.0	170	4.9	115	5.4	460	5.15	------
12,	6.6	1895	5.8	759	7.0	2470	8.75	5300	8.85	5480	5.75	800	5.2	305	5.2	305	4.9	115	4.95	140	5.35	420	5.2	------
13,	7.75	3620	5.8	759	8.5	4865	8.1	4185	7.95	3940	5.65	700	5.15	270	5.2	305	4.9	115	5.1	235	5.6	645	5.1	------
14,	7.95	3940	5.9	759	3.35	13950	7.9	3855	7.65	3400	5.6	645	5.3	380	5.15	270	5.05	202	5.05	200	5.6	645	5.2	------
15,	7.2	2765	12.0	11250	15.0	17400	7.6	3375	8.55	4950	5.55	600	5.2	305	5.25	340	5.05	202	5.05	200	5.4	460	5.3	------
16,	7.0	2470	17.0	21700	15.65	18800	9.4	6440	8.15	4270	5.55	600	5.25	340	5.0	170	4.95	140	5.0	170	5.5	550	5.3	------
17,	6.5	1755	15.65	18770	13.05	13350	8.4	4695	7.7	3535	5.65	700	5.2	305	5.35	420	4.95	140	5.0	170	5.2	305	5.3	------
18,	6.55	1830	11.4	10110	10.3	8040	7.85	3780	7.2	2765	5.55	600	5.25	340	5.05	200	4.9	115	4.95	140	5.3	380	5.3	------
19,	6.5	1755	9.25	6180	9.9	7320	8.4	4695	6.95	2400	5.45	500	5.3	380	5.25	340	4.95	140	5.05	170	5.35	420	5.3	------
20,	6.25	1410	8.4	4695	8.85	5480	9.3	6265	6.65	1970	5.35	420	5.25	340	5.1	235	4.9	115	4.95	140	5.3	380	5.35	------
21,	6.2	1345	7.8	3695	8.1	4185	8.85	5480	6.55	1830	5.25	340	5.25	340	5.25	340	5.0	170	4.95	140	5.35	420	5.25	------
22,	6.4	1615	7.65	3460	8.0	4020	8.3	4525	6.5	1755	5.25	340	5.35	420	5.15	270	4.95	140	5.1	235	5.4	460	5.2	------
23,	6.75	2110	7.1	2615	8.25	4440	7.9	3855	6.5	1755	5.3	380	5.75	800	5.0	170	4.95	140	4.9	115	5.4	460	5.5	------
24,	6.6	1895	6.8	2180	10.55	8500	7.5	3220	6.75	2110	5.25	340	5.55	600	5.3	380	4.9	115	4.9	115	5.3	380	5.2	------
25,	6.25	1410	6.75	2110	12.25	11750	7.25	2840	6.35	1550	5.4	460	5.75	800	5.15	270	4.95	140	4.85	92	5.35	420	5.15	------
26,	5.8	850	6.85	2250	11.0	9350	7.1	2615	6.15	1280	5.35	420	5.8	850	5.2	305	4.9	115	5.1	235	5.3	380	5.4	------
27,	6.45	1690	7.0	2470	12.6	12450	6.95	2400	6.45	1690	5.35	420	5.5	550	5.1	235	4.75	52	5.2	305	5.35	420	5.15	------
28,	6.05	1150	7.05	2540	13.95	15200	7.3	2915	6.45	1690	5.2	305	5.4	460	5.05	200	5.0	170	5.2	305	5.3	380	5.25	------
29,	6.25	1410	6.9	2325	15.5	18450	7.2	2765	6.15	1280	5.25	340	5.4	460	5.05	200	5.0	170	5.3	380	5.1	235	5.2	------
30,	6.1	1210	------	------	14.4	16140	6.95	2400	6.15	1280	5.35	420	5.35	420	4.9	115	4.9	115	5.4	460	5.35	420	5.2	------
31,	5.8	850	------	------	11.7	10680	------	------	6.35	1550	------	------	5.25	340	5.1	235	------	------	5.35	420	------	------	5.25	------

Note:—Ice conditions from about February 1 to 14 and during the greater portion of December, 1908. Conditions of flow may also have been slightly affected by ice January 27 to 31, 1908. Estimates made during these periods. (See "Estimated Monthly Discharge" for 1908.)

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHENANGO RIVER, AT BINGHAMTON, N. Y.

1909.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.2	305	6.1	1210	8.25	4440	8.55	4950	10.9	9160	5.95	1020	5.4	460	5.1	235	4.9	115	4.8	70	5.15	270	5.4	460
2,	5.1	235	5.95	1020	7.8	3700	8.7	5220	12.3	11800	5.8	850	5.35	420	5.15	270	4.9	115	4.95	142	5.0	170	5.3	380
3,	5.2	305	6.2	1340	7.65	3460	9.2	6090	10.2	7860	5.8	850	5.3	380	5.15	270	4.9	115	5.0	170	5.1	235	5.2	305
4,	5.3	380	6.15	1280	7.75	3620	9.2	6090	10.6	8590	5.8	850	5.15	270	5.1	235	4.9	115	4.95	142	5.1	235	5.2	305
5,	6.4	1620	6.2	1340	7.0	2470	8.9	5560	9.95	7410	6.0	1080	5.2	305	5.0	170	4.9	115	4.9	115	5.1	235	5.4	460
6,	11.3	9920	8.2	4360	6.9	2320	8.9	5560	8.9	5560	7.4	3060	5.15	270	5.0	170	4.9	115	4.9	115	5.0	170	5.2	305
7,	9.8	7140	10.1	7680	7.05	2540	9.8	7140	9.5	6620	6.52	1780	5.2	305	5.1	235	4.9	115	4.9	115	4.8	70	5.2	305
8,	7.35	2990	9.0	5740	6.8	2180	10.3	8040	8.75	5300	6.2	1340	5.15	270	4.85	92	4.9	115	4.9	115	5.1	235	5.2	305
9,	6.65	1960	7.55	3300	6.7	2040	9.5	6620	8.28	4490	6.0	1080	5.1	235	5.05	202	4.9	115	4.85	92	4.95	142	4.95	142
10,	6.65	1960	7.1	2620	8.6	5040	8.6	5040	7.7	3540	6.3	1480	5.1	235	5.05	202	5.0	170	4.85	92	5.05	202	5.15	270
11,	6.55	1820	8.15	4270	11.0	9350	8.2	4360	9.2	6090	7.3	2920	5.1	235	5.1	235	5.2	305	4.9	115	5.0	170	5.15	270
12,	6.5	1760	7.48	3190	9.9	7320	7.7	3540	9.15	6000	6.6	1900	5.1	235	4.9	115	5.2	305	5.0	170	5.0	170	5.0	170
13.	5.8	850	7.28	2880	8.45	4780	7.4	5060	8.0	4020	6.3	1480	5.0	170	4.9	115	5.2	305	5.0	170	5.05	202	5.2	305
14,	5.75	798	7.2	2760	8.2	4360	9.6	6790	7.6	3380	7.48	3190	5.0	170	4.8	70	5.1	235	5.1	235	5.0	170	5.2	305
15,	6.15	1280	8.35	4610	7.7	3540	13.15	13600	7.85	3780	6.9	2320	5.0	170	4.8	70	5.1	235	5.0	170	5.0	170	6.35	1550
16,	6.0	1080	9.4	6440	7.2	2760	11.9	11100	7.52	3250	6.4	1620	4.9	115	4.85	92	5.1	235	5.0	170	5.0	170	6.15	1280
17,	5.7	745	10.6	8590	7.15	2690	10.2	7860	7.3	2920	6.2	1340	4.9	115	5.0	170	5.0	170	4.95	142	5.0	170	5.65	695
18,	5.65	695	9.2	6090	6.8	2180	9.3	6260	7.25	2840	6.75	2110	5.2	305	5.0	170	4.95	142	4.95	142	5.0	170	5.6	645
19,	5.5	550	7.9	3860	6.75	2110	8.5	4860	6.95	2400	6.7	2040	5.2	305	5.2	305	4.9	115	4.95	142	5.05	202	5.4	460
20,	5.6	645	15.4	18200	6.7	2040	8.3	4520	6.75	2110	6.35	1550	5.0	170	5.15	270	4.85	92	4.95	142	5.05	202	5.35	420
21.	5.75	798	15.7	18900	6.6	1900	8.0	4020	6.5	1760	6.1	1210	5.0	170	5.15	270	4.9	115	4.95	142	5.0	170	5.4	380
22,	5.8	850	13.05	13400	6.4	1620	7.95	3940	6.35	1550	5.98	1060	5.0	170	5.0	170	4.9	115	4.95	142	5.1	235	5.45	350
23,	5.9	960	10.25	7950	6.3	1480	7.6	3380	6.3	1480	6.02	1110	5.0	170	5.2	305	4.8	70	5.1	235	5.2	305	5.4	300
24,	6.65	1960	11.9	11100	6.35	1550	7.2	2760	6.2	1340	6.0	1080	5.1	235	5.0	170	5.0	170	5.2	305	5.4	460	5.35	300
25,	13.8	14900	14.65	16700	8.15	4270	6.95	2400	6.1	1210	5.7	745	5.45	505	5.1	235	5.0	170	5.4	460	5.2	305	5.35	300
26,	12.6	12400	13.05	13400	11.65	10600	6.8	2180	6.0	1080	5.7	745	5.4	460	4.7	35	4.9	115	5.2	305	5.2	305	5.3	250
27,	9.7	6960	10.3	8040	10.35	8130	6.7	2040	5.95	1020	5.6	645	5.25	342	4.95	142	4.95	142	5.2	305	5.25	342	5.3	250
28,	8.1	4190	9.5	6620	9.9	7320	6.6	1900	5.95	1020	5.6	645	5.15	270	4.6	10	5.0	170	5.15	270	5.3	380	5.25	250
29,	7.2	2760	------	------	9.7	6960	6.55	1820	6.1	1210	5.55	598	5.2	305	4.95	142	5.0	170	5.1	235	5.2	305	5.35	250
30,	7.1	2620	------	------	9.25	6180	8.4	4700	6.0	1080	5.5	550	5.2	305	5.05	202	4.8	70	5.1	235	5.4	460	5.25	250
31,	6.85	2250	------	------	8.7	5220	------	------	6.0	1080	------	------	5.15	270	4.9	115	------	------	4.95	142	------	------	5.2	250

Note:—Ice conditions prevailed from about December 21 to 31 and also for short intervals at other times during the winter periods. Daily discharges January 1 to December 20, based on a well defined rating curve. Daily discharge January 1 to February 6 and December 1 to 20 may be somewhat in excess, due to slight ice conditions for short intervals. Daily discharge December 21 to 30 estimated on the basis of daily discharge at other stations in Susquehanna drainage.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHENANGO RIVER, AT BINGHAMTON, N. Y.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.25	350	6.4	1620	18.25	26200	7.2	2760	6.5	1760	6.95	2400	5.4	460	5.1	235	5.2	305	5.8	850	5.4	460	6.4	1620
2,	5.25	350	6.25	1410	21.4	34600	6.95	2400	6.9	2320	------	2260	5.4	460	5.1	235	5.1	235	5.7	745	5.4	460	6.3	1480
3,	5.3	350	6.4	1620	19.0	28200	6.7	2040	6.85	2250	6.75	2110	5.3	380	5.2	305	5.05	202	5.6	645	5.2	305	6.25	1410
4,	5.25	350	6.3	1480	16.75	22400	6.5	1700	8.75	5300	------	1800	5.35	420	5.15	270	5.2	305	5.6	645	5.3	380	6.2	1340
5,	5.35	350	6.1	1210	14.15	16200	6.45	1680	7.75	3620	6.3	1480	5.3	380	5.15	270	5.35	420	5.5	550	5.5	550	6.2	1340
6,	5.2	350	6.1	1210	13.9	15600	6.35	1550	7.2	2760	7.25	2840	5.3	380	5.15	270	5.5	550	5.45	505	5.45	505	6.0	1080
7,	5.3	350	5.75	798	15.75	20000	6.3	1480	6.8	2180	7.75	3620	5.3	380	5.15	270	5.6	645	5.45	505	5.9	960	5.9	960
8,	5.3	350	5.7	745	14.6	17300	6.4	1620	6.6	1900	7.9	3860	5.3	380	5.15	270	5.7	745	5.45	505	5.9	960	5.95	450
9,	5.4	350	5.95	900	12.5	12600	6.3	1480	6.5	1760	7.15	2690	5.3	380	5.15	270	5.65	695	5.35	420	5.85	905	5.8	450
10,	5.4	350	6.05	900	10.45	8420	6.3	1480	6.75	2110	6.75	2110	5.25	342	5.2	305	5.4	460	5.45	505	6.0	1080	5.65	450
11,	5.4	350	6.0	900	9.4	6460	6.15	1280	6.5	1760	6.75	2110	5.2	305	5.1	235	5.3	380	5.45	505	7.15	2690	5.8	450
12,	5.3	350	5.85	900	8.95	5650	6.35	1550	6.45	1680	7.9	3860	5.2	305	5.2	305	5.35	420	5.35	420	7.1	2620	5.85	450
13,	5.35	350	5.8	900	9.0	5740	6.4	1620	6.25	1410	7.6	3380	5.2	305	5.2	305	5.3	380	5.4	460	6.75	2110	5.9	450
14,	5.3	350	5.75	900	8.8	5390	6.15	1280	6.15	1280	7.1	2620	5.15	270	5.2	305	5.6	645	5.4	460	6.55	1820	5.8	450
15,	5.2	350	5.85	900	8.3	4520	6.05	1140	6.1	1210	6.6	1900	5.1	235	5.2	305	5.45	505	5.4	460	6.48	1730	5.9	450
16,	5.3	350	5.9	900	7.8	3700	6.0	1080	6.0	1080	6.5	1760	5.2	305	5.15	270	5.3	380	5.05	202	6.45	1680	5.75	450
17,	5.3	350	5.95	900	7.7	3540	5.9	960	5.9	960	6.85	2250	5.25	342	5.2	305	5.25	342	5.4	460	6.35	1550	5.6	450
18,	5.4	350	6.0	900	7.3	2920	5.9	960	5.9	960	6.45	1680	5.3	380	5.2	305	5.1	235	5.4	460	6.25	1410	5.7	450
19,	5.6	350	5.95	900	7.25	2840	6.3	1480	6.0	1080	6.9	2320	5.1	235	5.2	305	5.1	235	5.3	380	6.25	1410	5.85	450
20,	6.3	350	5.9	900	7.9	3860	6.35	1550	5.9	960	6.5	1760	5.1	235	5.1	235	5.4	460	5.35	420	6.2	1340	5.8	450
21,	6.7	350	6.1	900	9.4	6460	6.2	1340	6.05	1140	6.2	1340	5.1	235	5.2	305	5.2	305	5.1	235	6.1	1210	5.85	450
22,	12.2	12000	6.65	900	9.3	6280	6.1	1210	6.3	1480	5.95	1020	5.1	235	5.2	305	5.2	305	5.3	380	6.1	1210	5.7	450
23,	12.5	12600	7.1	900	9.25	6190	6.0	1080	6.15	1280	5.8	850	5.1	235	5.15	270	5.2	305	5.0	170	6.05	1140	5.65	450
24,	10.95	9400	6.75	900	9.3	6280	5.9	960	6.1	1210	5.75	798	5.0	170	5.15	270	5.1	235	5.3	380	6.1	1210	5.8	450
25,	9.2	6100	6.4	900	9.55	6730	6.15	1280	6.85	2250	5.65	695	5.1	235	5.25	342	5.05	202	5.3	380	6.55	1820	6.1	450
26,	8.1	4180	6.7	900	9.8	7190	6.7	2040	10.1	7760	5.6	645	4.95	142	5.2	305	5.25	342	5.2	305	6.85	2250	6.2	450
27,	7.6	3380	6.1	900	9.4	6460	7.0	2470	8.85	5480	5.55	598	5.05	202	5.15	270	6.1	1210	5.35	420	6.7	2040	6.1	450
28,	7.35	2990	12.65	12900	8.35	4610	6.7	2040	8.25	4440	5.5	550	5.1	235	5.1	235	5.9	960	5.35	420	6.4	1620	6.05	450
29,	7.1	2620	------	------	7.9	3860	6.3	1480	7.5	3220	5.55	598	5.3	380	5.1	235	6.5	1760	5.35	420	6.4	1620	6.15	450
30,	6.5	1760	------	------	7.6	3380	6.65	1900	7.0	2470	5.45	505	5.2	305	5.1	235	6.0	1080	5.2	305	6.35	1550	7.7	450
31,	6.4	1620	------	------	7.4	3060	------	------	7.05	2540	------	------	5.2	305	5.15	270	------	------	5.4	460	------	------	8.5	450

Note.—Relation of gage height to discharge probably affected by ice from January 1 to 21, February 9 to 27 and December 8 to 31. Gage heights taken to water surface except January 3 to 21 and December 18, which were taken to the top of the ice.

Daily discharge determined from discharge rating curve not very well defined. Discharge for ice periods estimated. (See "Estimated Monthly Discharge" for 1910.)

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHENANGO RIVER, AT BINGHAMTON, N. Y.

1911	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	7.6	3530	7.15	2790	6.25	1000	8.9	6060	6.45	1720	5.95	1020	5.46	398	5.29	273	5.74	636	6.55	1510	7.2	2350	7.3	2490
2,	8.4	5020	7.1	2710	6.45	900	8.3	4820	7.0	2550	6.15	1290	5.36	322	5.18	198	5.64	546	5.81	700	6.85	1880	7.0	2080
3,	12.2	13900	6.7	2100	6.3	900	7.7	3700	7.3	3030	5.97	1040	5.36	322	5.18	198	5.58	494	6.05	945	6.55	1510	6.85	1880
4,	11.8	12900	6.5	1800	6.15	800	7.6	3530	6.85	2320	5.84	894	5.33	301	5.28	266	5.53	454	5.89	780	6.45	1390	6.65	1630
5,	9.4	7130	6.55	1880	6.4	800	8.5	5220	6.6	1950	5.82	872	5.48	414	5.18	198	5.49	422	6.20	1110	6.3	1220	6.5	1450
6,	8.1	4430	6.0	1080	6.0	700	12.4	14400	6.4	1650	6.25	1430	5.58	494	5.18	198	5.58	494	6.05	945	6.3	1220	6.4	1330
7,	8.0	4240	6.05	900	6.0	700	15.5	23200	6.25	1430	6.65	2020	5.48	414	5.36	322	6.2	1110	6.35	1280	6.7	1690	6.3	1220
8,	7.6	3530	6.15	900	5.9	600	14.8	21200	6.2	1360	6.4	1650	5.34	308	5.32	294	6.15	1060	6.65	1630	6.9	1950	6.3	1220
9,	7.6	3530	6.35	800	5.85	600	12.2	13900	6.1	1220	6.2	1360	5.34	308	5.32	294	6.8	1720	6.4	1330	6.65	1630	6.3	1220
10,	7.2	2870	6.2	800	6.05	900	11.0	10800	6.05	1150	5.96	1030	5.24	238	5.42	366	7.5	2770	6.0	890	6.45	1390	6.8	1820
11,	6.95	2480	6.15	700	6.3	1200	10.0	8460	6.0	1080	5.9	960	5.28	266	5.28	266	7.0	2080	6.1	1000	6.4	1330	7.0	2080
12,	7.3	3030	6.1	700	6.3	1500	9.6	7570	5.96	1030	7.0	2550	5.28	266	5.22	224	6.5	1450	6.2	1110	6.35	1280	7.5	2770
13,	8.1	4430	6.1	700	6.8	2250	9.1	6480	5.87	927	8.3	3960	5.26	252	5.19	204	6.5	1450	6.2	1110	7.2	2350	8.3	3960
14,	9.4	7130	6.1	700	7.4	3190	9.2	6690	5.82	872	9.2	5440	5.2	210	5.39	343	6.25	1160	6.05	945	6.9	1950	8.3	3960
15,	10.2	8920	6.0	650	8.1	4430	11.0	10800	5.79	840	8.0	3500	5.1	150	5.36	322	6.0	890	5.98	870	6.7	1690	8.0	3500
16,	8.6	5430	5.9	600	8.0	4240	10.3	9150	5.74	787	6.95	2020	5.16	186	5.41	358	6.0	890	5.94	830	6.65	1630	8.9	4930
17,	7.4	3190	6.0	900	7.1	2710	9.2	6690	5.72	766	6.95	2020	5.0	100	5.70	600	5.88	770	5.8	690	6.6	1570	9.3	5610
18,	7.1	2710	6.2	1200	7.2	2870	8.4	5020	5.72	766	6.55	1510	5.9	790	5.56	478	5.86	750	6.4	1330	7.2	2350	8.9	4920
19,	7.0	2550	6.65	1600	6.75	2180	7.9	4060	5.70	745	6.25	1160	5.82	710	5.49	422	5.76	654	7.6	2910	8.1	3650	8.6	4440
20,	6.9	2400	6.35	1300	6.8	2250	8.0	4240	5.7	745	6.05	945	5.64	546	5.26	252	5.66	564	7.1	2210	8.1	3650	.....	*3610
21,	6.8	2250	6.1	1100	6.7	2100	7.9	4060	5.7	745	5.88	770	5.6	510	5.44	382	5.65	546	6.9	1950	7.5	2770	.....	*2780
22,	6.7	2100	6.1	900	7.0	2550	8.0	4240	5.68	725	5.77	663	5.54	462	5.35	315	5.56	478	6.75	1760	7.3	2490	6.9	1950
23,	6.6	1950	6.1	800	8.6	5430	8.3	4820	5.63	675	5.68	582	5.49	422	5.35	315	6.62	528	8.2	3800	6.95	2020	10.0	6850
24,	6.2	1360	6.1	700	8.3	4820	7.9	4060	6.35	1580	5.72	618	5.53	454	5.35	315	5.6	510	8.2	3800	6.9	1950	10.0	6850
25,	6.4	1650	6.05	800	7.4	3190	7.4	3190	7.1	2710	5.68	582	5.47	406	5.34	308	5.6	510	7.4	2630	7.0	2080	8.9	4920
26,	6.3	1500	6.15	1000	7.6	3530	7.1	2710	6.7	2100	5.57	486	5.54	462	5.38	336	5.61	519	6.95	2020	6.9	1950	8.6	4440
27,	6.45	1720	6.4	1400	12.9	15800	6.9	2400	6.35	1580	5.58	494	5.44	382	5.40	208	5.5	430	6.8	1820	6.8	1820	8.6	4440
28,	11.3	1600	6.55	1200	18.1	31200	6.7	2100	6.1	1220	5.66	564	5.44	382	5.30	242	5.32	294	6.65	1630	6.8	1820	8.2	3800
29,	10.5	9630	......	......	15.3	22600	6.55	1880	5.94	1010	5.67	573	5.34	308	5.74	626	5.54	462	6.45	1390	7.8	3200	6.85	1880
30,	8.9	6060	......	......	12.1	13600	6.45	1720	5.8	850	5.54	462	5.17	190	6.05	945	5.40	398	6.35	1280	7.8	3200	6.55	1510
31,	7.4	3190	......	......	10.5	9630	......	......	5.74	787	......	......	5.35	315	5.97	860	......	......	6.5	1450	......	......	6.5	1450

* Interpolated.

Note:—Relation of gage height to discharge probably affected by anchor ice from February 7 to March 11. There was also undoubtedly some backwater for brief periods during the remainder of January, February and March. Gage heights to water surface.

Daily discharge determined from discharge rating curves, the first applicable January to June 12, the second applicable June 13 to December 31. Both curves are fairly well defined at low and medium stages, but at high stages are somewhat uncertain owing to variable effect of backwater from the Susquehanna River. Discharge February 7 to March 11 estimated from climatologic records and the discharge from adjacent drainage areas. Discharge December 20 to 21 interpolated.

ESTIMATED MONTHLY DISCHARGE OF CHENANGO RIVER, AT BINGHAMTON, N. Y.

(Drainage Area 1530 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean	Second-feet per square mile.	Depth in inches.
1901.					
August,	2165	208	576	0.38	0.44
September,	1091	304	524	.34	.38
October,	1846	480	807	.53	.61
November,	3800	285	1204	.78	.87
December,	27630	1115	4750	3.10	3.57
1902.					
January,	5105	827	1960	1.28	1.48
February,	5530	804	1339	.87	.91
March,	35950	4325	11717	7.64	8.81
April,	5700	1417	3246	2.12	2.37
May,	2067	782	1307	.85	.98
June,	8495	1235	1820	1.19	1.33
July,	17400	1859	6011	3.92	4.52
August,	6510	[illegible]	2002	1.30	1.50
September,	3575	410	809	.53	.59
October,	10680	1187	2539	1.66	1.91
November,	4175	1313	1999	1.30	1.43
December,	15405	1248	4273	2.79	3.22
The year,	35950	410	3252	2.12	29.07
1903.					
January,	14775	2081	5289	3.44	3.99
February,	14050	1807	5291	3.44	3.58
March,	20600	4325	10114	6.59	7.40
April,	7770	1067	3210	2.09	2.33
May,	1007	314	608	.40	.46
June,	5700	103	1737	1.13	1.26
July,	2825	570	1039	.68	.78
August,	16560	600	2812	1.83	2.11
September,	7500	716	1763	1.15	1.28
October,	28540	661	6243	4.07	4.69
November,	7680	1430	2385	1.55	1.73
December,	4625	1115	1886	1.23	1.42
The year,	28540	103	3532	2.30	31.21
1904.					
January,	10490	1391	3160	2.06	2.37
February,	18030	2235	6390	4.17	4.50
March,	28540	2680	8966	5.84	6.73
April,	13150	4025	7037	4.59	5.12
May,	5190	1417	2376	1.55	1.79
June,	4100	610	1518	.990	1.105
July,	2450	450	1060	.691	.807
August,	4475	705	1641	1.07	1.23
September,	2480	460	953	.621	.693
October,	8970	983	2587	1.69	1.95
November,	2305	995	1429	.932	1.04
December,	13810	401	1981	1.29	1.49
The year,	28540	401	3258	2.12	28.82

ESTIMATED MONTHLY DISCHARGE OF CHENANGO RIVER, AT BINGHAMTON, N. Y.

(Drainage Area 1530 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean	Second-feet per square mile.	Depth in inches.
a1905.					
January (1-25),	8495	1287	3335	2.18	2.03
February,	------	------	------	------	------
March (19-31),	25000	------	------	------	------
April,	12370	1927	5120	3.35	3.74
May,	1955	875	1442	.942	1.09
June,	11890	706	2593	1.69	1.89
July,	2420	738	1347	.880	1.01
August,	3470	600	1339	.875	1.01
September,	16810	1235	4351	2.84	3.17
October,	6870	1055	2237	1.46	1.68
November,	8970	1055	2124	1.39	1.55
December,	16770	1391	4431	2.90	3.34
b1906.					
January,	14200	1490	3550	2.32	2.68
February,	5780	820	1930	1.26	1.31
March,	14100	776	3520	2.30	2.65
April,	13300	1440	6220	4.07	4.54
May,	10800	967	2910	1.90	2.19
June,	3970	1030	2040	1.33	1.48
July,	3000	525	1300	.850	.98
August,	1360	396	789	.516	.59
September,	570	145	380	.248	.28
October,	5220	355	1260	.824	.95
November,	6090	875	2180	1.42	1.58
December,	8220	875	2700	1.76	2.03
The year,	14200	145	2400	1.57	21.26
c1907.					
January,	14900	1340	5110	3.34	3.85
February,	2020	414	844	.552	.57
March,*	12600	380	4380	2.86	3.30
April,	11100	1680	3470	2.27	2.53
May,	6960	1140	2770	1.81	2.09
June,	2110	420	1010	.660	.74
July,	1760	444	918	.600	.69
August,	745	142	340	.222	.26
September,	7410	142	1450	.948	1.06
October,	8680	1080	3080	2.01	2.32
November,	14000	1550	3830	2.50	2.79
December,	19500	1080	5880	3.84	4.43
The year,	19500	142	2760	1.80	24.63

a Ice conditions January 26 to March 18; no estimate made.

b Values for January, February and December are probably slightly in excess of the true value, owing to needle ice. Values for entire year are excellent, except January, February and December, which are good.

c Discharge February 1907 has been corrected 10% on account of probabl backwater effect from ice. Portions of January, March and December, 1907, were also probably more or less affected; the mean for the month, however, is probably not affected more than a few per cent. from this cause and, hence, no correction has been attempted. (See rating table foot note.)

* Discharge interpolated March 31, 1907.

ESTIMATED MONTHLY DISCHARGE OF CHENANGO RIVER, AT BINGHAMTON, N. Y.

(*Drainage Area 1530 Square Miles.*)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
†1908.					
January,	5650	850	2130	1.39	1.60
February,	21700		3690	2.41	2.60
March,	18800	1620	7630	4.99	5.75
April,	9260	2400	4810	3.14	3.50
May,	10300	1280	4000	2.61	3.01
June,	2250	305	737	.482	.54
July,	850	270	412	.269	.31
August,	420	115	282	.184	.21
September,	202	52	151	.099	.11
October,	460	92	192	.125	.14
November,	645	115	405	.265	.30
December,		92	250	.163	.19
The year,	21700	52	2060	1.34	18.26
1909.					
January,	14900	235	2830	1.85	2.13
February,	18900	1020	6670	4.36	4.54
March,	10600	1480	4130	2.70	3.11
April,	13600	1820	5180	3.39	3.78
May,	11800	1020	3900	2.55	2.94
June,	3190	550	1410	.922	1.03
July,	505	115	269	.176	.20
August,	305	10	177	.116	.13
September,	305	70	155	.101	.11
October,	460	70	179	.117	.13
November,	460	70	234	.153	.17
December,	1550	142	402	.263	.30
The year,	18900	10	2130	1.39	18.57
*1910.					
January,	12600		2060	1.35	1.56
February,	12900		1430	.935	0.97
March,	34600	2840	9890	6.46	7.45
April,	2760	960	1570	1.03	1.15
May,	7760	960	2310	1.51	1.74
June,	3860	505	1880	1.23	1.37
July,	460	142	308	.201	0.23
August,	342	235	278	.182	0.21
September,	1760	202	508	.332	0.37
October,	850	170	451	.295	0.34
November,	2690	305	1350	.882	0.98
December,			646	.422	0.49
The year,	34600	142	1890	1.24	16.86
1911.					
January,	13900	1360	4400	2.88	3.32
February,	2790	600	1170	0.765	0.80
March,	31200	600	4810	3.14	3.62
April,	23200	1720	6910	4.52	5.04
May,	3030	675	1320	0.863	0.99
June,	5440	462	1420	0.928	1.04
July,	790	100	364	0.238	0.27
August,	945	198	362	0.237	0.27
September,	2770	294	835	0.546	0.61
October,	3800	690	1540	1.01	1.16
November,	3650	1220	2035	1.33	1.48
December,	6850	1220	3130	2.05	2.36
The year,	31200	100	2360	1.54	20.96

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†Discharge during frozen periods estimated on the basis of the discharge of adjacent drainages. It is only roughly approximate. Discharge February 1 to 14, 1908, 759 second-feet.

*Discharge for periods during which ice was present estimated by means of climatologic records and record of discharge at Wilkes-Barre.

Mean discharge January 1 to 21 estimated 350 second-feet; no great variation in discharge. Mean discharge February 9 to 27 estimated 900 second-feet, ranging from about 500 to about 2,000 second-feet. Mean discharge from December 8 to 31 estimated 450 second-feet; no great variation in discharge.

NORTH BRANCH OF SUSQUEHANNA RIVER.

DESCRIPTION OF BASIN.

The North Branch of the Susquehanna river, which joins the West Branch at Northumberland to form the main Susquehanna river, drains a total area of 11,485 square miles, of which 6,270 lie in Pennsylvania, and 5,215 in New York State. This branch rises in the Catskill Mountains, in southeastern New York, close to the headwaters of the Delaware river, flows in a general southwesterly course into Pennsylvania near the northeastern corner of the State, and, forming a loop about 16 miles in length, again enters New York State, where it continues westerly, finally turning southward into Pennsylvania, just north of Sayre, Bradford county, and follows a southeasterly course to Wilkes-Barre, and thence southwesterly to its junction with the West Branch. The total length of the river, to the forks at Oneonta, N. Y., is approximately 290 miles. From its headwaters to near where it crosses into Pennsylvania for the second time, this stream flows through a well populated, agricultural area, the mountains being fairly well covered with second growth timber, the channel lying in a narrow valley. Just above Sayre the river flows through a wide, open, thickly settled, farming country, but as it enters Pennsylvania it changes to a narrow valley, bounded by hills 400 to 600 feet high, and thus continues, passing now and then through broad flats, to its mouth.

The uper part of the watershed in Pennsylvania is thinly inhabited and not extensively farmed, the mountains being usually covered with second growth timber, but from the mouth of the Lackawanna river, 10 miles above Wilkes-Barre, to its mouth, the basin is densely settled. In this section lies the Wyoming Valley anthracite coal field. Four cities, Pittston, Scranton, Carbondale and Wilkes-Barre, many large boroughs and numerous farming and mining villages are found in this drainage area in Pennsylvania, besides which some cities and boroughs of New York State also lie in this watershed.

The slope of the stream in Pennsylvania is not steep, flowing, as it does, through a succession of rapids and pools, and follows a uniform rate of about two feet per mile to its mouth. All but a small portion of the basin, near the mouth, lies within the glacial area. The sub-basins, lying within the glacial area, abound in lakes, ponds and swamps and a few of these basins are still well forested.

The principal tributaries in New York are the Chenango and Unadilla rivers, and in Pennsylvania the Chemung and Lackawanna rivers, Towanda, Wyalusing, Tunkhannock and Fishing creeks.

Numerous domestic water supplies are taken from tributaries of the North Branch and a few from the parent stream, which is also used to some extent for industrial purposes. Water power is developed only to a limited extent.

For many years the large coal mining companies in this region have been dumping culm and refuse matter into the river and its tributaries, until at the present time the pools and many channels between the mouth of the Lackawanna river and Sunbury are filled to depths varying from four to 25 feet, thus obstructing the flow, polluting the river and, in time of floods, causing damage, both by reason of blocking of the channels and of the culm being deposited on valuable farm lands.

The river is not used for navigation, being too shallow and swift.

Over the greater portion of this basin there is an average annual precipitation of 35 to 40 inches, while a small strip to the southeast of the stream, from Northumberland to Scranton receives from 40 to 45 inches.

The flow has been measured at Binghamton, N. Y., since July 31, 1901; at Wilkes-Barre, Pa., since March 30, 1899, 67 miles above the mouth; and at Danville, Pa., since March 25, 1899, 12 miles above the mouth.

SUSQUEHANNA BASIN—STATION NO. 2.

NORTH BRANCH OF SUSQUEHANNA RIVER AT BINGHAMTON, N. Y.

DESCRIPTION OF STATION.

This station was established July 31, 1901, by the United States Geological Survey and has since been maintained in co-operation with the New York State Engineer. It is located at the Washington Street Bridge, about 800 feet upstream from the junction of Chenango and Susquehanna Rivers.

The channel is straight for about 500 feet above and below the bridge, and is about 300 feet wide at low water and about 450 feet wide at high water. The bed is gravel and small stones.

Discharge measurements are made from the Exchange Street Bridge, 1900 feet upstream from the Washington Street Bridge, on account of the unfavorable conditions produced by a rift which extends diagonally across the stream underneath the latter bridge.

A standard chain gage is attached to the upstream side of the left span of the Washington Street Bridge. The gage is upstream from the crest of the rift and over a stretch of smooth water extending to a dam about 2,800 feet above. The gage is read twice daily. The bench mark is a chiselled draft on the corner of the left bridge abutment, on the upstream side. Its elevation is 23.71 feet above gage datum.

During the winter months the discharge is usually affected but little by the ice conditions. High water estimates are liable to considerable error due to backwater conditions from ice jams, which form near Willow Point and, also, from high water conditions in the Chenango.

The data published for this station is based upon four rating curves, each one having been changed, or modified, as additional meter measurements were obtained, made necessary by ice and backwater conditions.

Since the establishment of this station, 51 discharge measurements have been made.

The following data have been furnished by United States Geological Survey:

DISCHARGE MEASUREMENTS OF NORTH BRANCH SUSQUEHANNA RIVER, AT BINGHAMTON, N. Y.

(Drainage area 2400 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1901.							
1	July 3,	Murphy,	------	891	1.06	2.12	947	
2	July 10,	do.	------	1020	1.40	2.35	1425	
3	July 30,	do.	------	847	.72	1.99	608	
4	Aug. 20,	do.	------	909	1.04	2.05	942	
5	Aug. 20,	do.	------	923	1.03	2.06	952	
6	Aug. 21,	do.	------	1989	3.65	4.60	7244	
7	Aug. 22,	do.	------	1439	2.61	3.19	3752	
8	Aug. 22,	do.	------	1324	2.25	2.90	2983	
9	Aug. 23,	do	------	1189	1.83	2.60	2176	
	1902.							
10	July 2,	Murphy,	------	1790	3.26	4.08	5839	
11	July 4,	do.	------	1717	3.28	3.90	5230	
12	July 14,	do.	------	1320	2.32	2.96	3064	
13	Aug. 3,	do.	------	2187	3.95	5.08	8633	
14	Aug. 4,	do.	------	1952	3.53	4.59	6902	
15	Aug. 15,	do.	------	1140	1.85	2.61	2105	
16	Aug. 16,	do.	------	1103	1.74	2.50	1920	

DISCHARGE MEASUREMENTS OF NORTH BRANCH SUSQUEHANNA RIVER, AT BINGHAMTON, N. Y.—Continued.

(Drainage area 2400 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1903.							
17	April 7,	Murphy,	------	1773	3.35	4.13	5946	
18	May 15,	do.	------	794	.96	2.05	763	
19	May 19,	do.	------	746	.86	1.96	640	
20	June 13,	Covert,	------	2293	3.80	5.25	8726	
21	Aug. 22,	do.	------	1241	2.07	2.65	2572	
22	Sept. 3,	do.	------	544	1.81	2.00	948	
23	Oct. 1,	Halsey,	------	889	1.08	2.14	962	
24	Oct. 11,	Covert,	------	6446	7.71	16.32	49707	
25	Oct. 13,	do.	------	2944	4.94	6.35	14566	
	1904.							
26	Mar. 8,	Covert,	------	3975	3.58	11.24	14254	Ice gorge 3 miles below.
27	Mar. 12,	do.	------	2846	2.60	7.90	7400	Ice gorge 3 miles below.
28	April 8,	Horton,	------	2524	4.50	6.94	11118	
29	July 13,	Covert,	------	736	1.07	2.04	786	
30	Sept. 10,	do.	------	825	1.29	2.13	1061	
	1905.							
31	May 17,	Beebe,	314	1504	2.04	2.95	3075	
32	Aug. 19,	Covert,	315	1732	2.29	3.39	3966	
33	Aug. 25,	Weeks,	308	1227	1.22	2.32	1501	
	1906.							
34	July 24,	Covert,	207	1260	1.33	2.33	1670	
35	Oct. 5,	do.	298	1100	.67	1.98	732	
36	Nov. 9,	do.	305	1210	.88	2.25	1070	
	1907.							
37	June 20,	Wood & Hoyt,	300	1160	1.01	2.10	1170	
	1908.							
38	Sept. 2,	Adams,	234	275	1.17	1.79	321	Msmt. made at Washington St. bridge where gage is located.
39	Sept. 28,	Adams,	220	277	1.02	1.76	282	Msmt. made at Washington St. bridge where gage is located.
40	Oct. 21,	Wood & French,	274	948	.38	1.90	356	
41	Nov. 3,	Covert,	300	1010	.59	2.15	592	
	1909.							
42	Aug. 20,	Covert,	438	497	3.30	2.43	1640	
	1910.							
43	Mar. 8,	Hoyt,	580	4340	5.69	11.55	24700	Surface float msmt. made by timing floating ice. Made from Exchange St. Bridge. Coef of 0.9 ft.
44	May 7,	Covert,	421	993	3.78	3.32	3750	Msmt. made at Washington St. bridge partly by wading and from bridge.
45	July 26,	Hoyt,	312	343	1.59	1.95	545	
	1911.							
46	Mar. 28,	Cockroff,	390	5860	5.21	14.24	29600	
47	April 21,	DeGolyer,	330	1980	3.37	4.59	6670	
48	June 14,	do.	343	2490	4.80	6.14	10700	
49	June 16,	do.	328	1840	3.22	4.33	5926	
50	Oct. 6,	do.	357	503	2.12	2.33	1074	Msmt. made by wading at Washington St. bridge.
51	Oct. 7,	do.	302	1260	1.25	2.49	1580	

DISCHARGE TABLE FOR NORTH BRANCH SUSQUEHANNA RIVER AT BINGHAMTON, N. Y., FROM AUG. 1, 1901, TO DEC. 31, 1905.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.75	210	.70	7405	.70	16930	.70	27620	.60	38200
.80	315	.80	7690	.80	17270	.80	27980	.70	38580
.90	525	.90	7980	.90	17610	.90	28340	.80	38960
2.00	740	5.00	8280	8.00	17950	11.00	28700	.90	39340
.10	960	.10	8580	.10	18300	.10	29060	14.00	39720
.20	1180	.20	8880	.20	18650	.20	29420	.10	40105
.30	1400	.30	9185	.30	19000	.30	29780	.20	40490
.40	1625	.40	9495	.40	19350	.40	30140	.30	40875
.50	1855	.50	10805	.50	19705	.50	30500	.40	41260
.60	2085	.60	10120	.60	20060	.60	30860	.50	41650
.70	2315	.70	10440	.70	20420	.70	31220	.60	42040
.80	2545	.80	10760	.80	20780	.80	31580	.70	42430
.90	2785	.90	11080	.90	21140	.90	31940	.80	42820
3.00	3025	6.00	11400	9.00	21500	12.00	32300	.90	43210
.10	3265	.10	11720	.10	21860	.10	32660	15.00	43600
.20	3505	.20	12040	.20	22220	.20	33020	.10	43990
.30	3755	.30	12360	.30	22580	.30	33380	.20	44380
.40	4005	.40	12680	.40	22940	.40	33740	.30	44770
.50	4255	.50	13000	.50	23300	.50	34105	.40	45160
.60	4505	.60	13320	.60	23660	.60	34470	.50	45550
.70	4755	.70	13640	.70	24020	.70	34840	16.00	47500
.80	5005	.80	13960	.80	24380	.80	35210	.50	49500
.90	5255	.90	14280	.90	24740	.90	35580	17.00	51500
4.00	5510	7.00	14600	10.00	25100	13.00	35950	.50	53500
.10	5770	.10	14930	.10	25460	.10	36320	18.00	55500
.20	6030	.20	15260	.20	25820	.20	36695	.50	57500
.30	6300	.30	15590	.30	26180	.30	37070	19.00	59500
.40	6570	.40	15920	.40	26540	.40	37445	.50	61500
.50	6845	.50	16255	.50	26900	.50	37820	20.00	63500
.60	7125	.60	16590	.60	27260				

Note:—The above table is applicable only for open channel conditions. It is based on discharge measurements made during 1901-1905. It is well defined between gage heights 2 feet and 5 feet. The table has been extended beyond these limits, being based on one measurement at 16.3 feet.

DISCHARGE TABLE FOR NORTH BRANCH SUSQUEHANNA RIVER AT BINGHAMTON, N. Y., FROM 1901, to 1906.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.75	210	.10	3265	.40	6570	.70	10440	7.00	14600
.80	315	.20	3505	.50	6845	.80	10760	.10	14930
.90	525	.30	3755	.60	7125	.90	11080	.20	15260
2.00	740	.40	4005	.70	7405	6.00	11400	.30	15590
.10	960	.50	4255	.80	7690	.10	11720	.40	15920
.20	1180	.60	4505	.90	7980	.20	12040	.50	16255
.30	1400	.70	4755	5.00	8280	.30	12360	.60	16590
.40	1625	.80	5005	.10	8580	.40	12680	.70	16930
.50	1855	.90	5255	.20	8880	.50	13000	.80	17270
.60	2085	4.00	5510	.30	9180	.60	13320	.90	17610
.70	2315	.10	5770	.40	9495	.70	13640	8.00	17950
.80	2545	.20	6030	.50	9810	.80	13960	9.00	21500
.90	2785	.30	6300	.60	10120	.90	14280	10.00	25100
3.00	3025								

Note:—The above table is applicable only for open channel conditions. It is based on discharge measurements made during 1901-1906. It is well defined between gage heights 2 feet and 5 feet. The upper part of the curve is based on one measurement at 16.3 feet.

DISCHARGE TABLE FOR NORTH BRANCH SUSQUEHANNA RIVER AT BINGHAMTON, N. Y., FROM 1907 TO 1910.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.50	45	.30	9180	9.00	21500	.70	34840	.40	49100
.60	115	.40	9490	.10	21860	.80	35210	.50	49500
.70	210	.50	9800	.20	22220	.90	35580	.60	49900
.80	335	.60	10120	.30	22580	13.00	35950	.70	50300
.90	500	.70	10440	.40	22940	.10	36320	.80	50700
2.00	700	.80	10760	.50	23300	.20	36690	.90	51100
.10	920	.90	11080	.60	23660	.30	37060	17.00	51500
.20	1150	6.00	11400	.70	24020	.40	37440	.10	51900
.30	1380	.10	11720	.80	24380	.50	37820	.20	52300
.40	1610	.20	12040	.90	24740	.60	38200	.30	52700
.50	1850	.30	12360	10.00	25100	.70	38580	.40	53100
.60	2090	.40	12680	.10	25460	.80	38960	.50	53500
.70	2330	.50	13000	.20	25820	.90	39340	.60	53900
.80	2570	.60	13320	.30	26180	14.00	39720	.70	54300
.90	2820	.70	13640	.40	26540	.10	40100	.80	54700
3.00	3070	.80	13960	.50	26900	.20	40480	.90	55100
.10	3320	.90	14280	.60	27260	.30	40870	18.00	55500
.20	3570	7.00	14600	.70	27620	.40	41260	.10	55900
.30	3820	.10	14930	.80	27980	.50	41650	.20	56300
.40	4070	.20	15260	.90	28340	.60	42040	.30	56700
.50	4320	.30	15590	11.00	28700	.70	42430	.40	57100
.60	4570	.40	15920	.10	29060	.80	42820	.50	57500
.70	4820	.50	16250	.20	29420	.90	43210	.60	57900
.80	5080	.60	16590	.30	29780	15.00	43600	.70	58300
.90	5340	.70	16930	.40	30140	.10	43990	.80	58700
4.00	5600	.80	17270	.50	30500	.20	44380	.90	59100
.10	5860	.90	17610	.60	38860	.30	44770	19.00	59500
.20	6120	8.00	17950	.70	31220	.40	45160	.10	59900
.30	6380	.10	18300	.80	31580	.50	45550	.20	60300
.40	6650	.20	18650	.90	31940	.60	45940	.30	60700
50	6920	.30	19000	12.00	32300	.70	46330	.40	61100
60	7190	.40	19350	.10	32660	.80	46720	.50	61500
70	7460	.50	19700	.20	33020	.90	47110	.60	61900
.80	7730	.60	20060	.30	33380	16.00	47500	.70	62300
.90	8000	.70	20420	.40	33740	.10	47900	.80	62700
5.00	8280	.80	20780	.50	34100	.20	48300	.90	63100
.10	8580	.90	21140	.60	34470	.30	48700	20.00	63500
.20	8880								

Note:—The above table is not applicable for ice or obstructed channel conditions. It is based on discharge measurements made during 1901-1910 and is well defined below gage height 6.0 feet. Above gage height 6.0 feet the rating curve is based on one measurement at 16.33 feet.

DISCHARGE TABLE FOR NORTH BRANCH SUSQUEHANNA RIVER AT BINGHAMTON, N. Y., FOR 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.70	210	.30	5850	.90	13250	.50	21400	12.00	29850
.80	300	.40	6120	7.00	13550	.60	21730	.10	30200
.90	410	.50	6390	.10	13860	.70	22060	.20	30550
2.00	540	.60	6660	.20	14170	.80	22390	.30	30900
.10	690	.70	6930	.30	14480	.90	22720	.40	31250
.20	860	.80	7200	.40	14790	10.00	23050	.50	31600
.30	1050	.90	7480	.50	15100	.10	23380	.60	31960
.40	1240	5.00	7760	.60	15410	.20	23710	.70	32320
.50	1440	.10	8040	.70	15720	.30	24040	.80	32680
.60	1650	.20	8320	.80	16030	.40	24370	.90	23040
.70	1870	.30	8600	.90	16340	.50	24700	13.00	33400
.80	2100	.40	8880	8.00	16650	.60	25040	.10	33760
.90	2330	.50	9160	.10	16960	.70	25380	.20	34120
3.00	2570	.60	9440	.20	17270	.80	25720	.30	34480
.10	2810	.70	9720	.30	17580	.90	26060	.40	34840
.20	3050	.80	10010	.40	17890	11.00	26400	.50	35200
.30	3290	.90	10300	.50	18200	.10	26740	.60	35560
.40	3540	6.00	10590	.60	18520	.20	27080	.70	35920
.50	3790	.10	10880	.70	18840	.30	27420	.80	36280
.60	4040	.20	11170	.80	19160	.40	27760	.90	36640
.70	4290	.30	11460	.90	19480	.50	28100	14.00	37000
.80	4540	.40	11750	9.00	19800	.60	28450	.10	37360
.90	4800	.50	12050	.10	20120	.70	28800	.20	37720
4.00	5060	.60	12350	.20	20440	.80	29150	.30	38080
.10	5320	.70	12650	.30	20760	.90	29500	.40	38440
.20	5580	.80	12950	.40	21080				

Note:—The above table is not applicable to ice conditions. It is based on 5 discharge measurements made during 1911, and is well defined between gage heights 1.7 feet and 7 feet.

This rating table supercedes all others. In plotting the curve measurement No. 49 was considered a little small, owing to backwater effect from the Chenango River, which flows in a short distance below. Measurement No. 47, by C. A. Cockroff, Engineer, of Binghamton, was considered doubtful, but carries some weight in changing the curve. When this measurement was made the Chenango River was unusually high compared with the stage of the Susquehanna, therefore the backwater effect was more than the usual amount. The high water portion of this curve is uncertain, there may be 20 per cent. error.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT BINGHAMTON, N. Y.

1901. Day.	AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.84	399	2.21	1180	2.19	1180	2.04	850	2.49	1855
2,	1.96	652	2.16	1070	2.19	1180	2.02	784	2.49	1855
3,	1.91	546	2.16	1070	2.16	1070	1.94	609	2.64	2200
4,	1.86	441	2.21	1180	2.16	1070	1.94	609	2.56	1970
5,	1.86	441	2.18	1136	2.14	1070	1.96	652	2.64	2200
6,	1.86	441	2.16	1070	2.06	850	1.94	609	2.44	1740
7,	1.86	441	2.06	850	2.04	850	1.94	609	2.32	1444
8,	1.91	546	2.04	850	1.99	718	1.94	609	2.34	1510
9,	1.91	546	2.04	850	2.04	850	1.92	567	2.44	1740
10,	1.86	441	1.96	652	1.99	718	1.94	609	5.21	8810
11,	1.94	609	1.98	696	2.02	784	1.92	567	6.12	11720
12,	1.94	609	2.06	850	1.96	652	1.96	652	5.32	9185
13,	1.91	546	2.04	850	1.99	718	2.49	1855	------	8655
14,	1.96	652	2.01	740	2.06	850	2.96	2905	4.62	7125
15,	1.94	609	2.08	916	2.14	1070	2.79	2545	14.86	43210
16,	1.94	609	2.16	1070	2.32	1444	2.54	1970	13.74	38580
17,	1.96	652	2.21	1180	2.39	1625	2.44	1740	9.24	22220
18,	2.11	982	2.36	1510	------	1458	2.42	1671	5.66	10280
19,	2.16	1092	2.36	1510	2.26	1290	2.36	1510	4.29	6300
20,	2.06	872	2.34	1510	2.24	1290	2.39	1625	3.46	4130
21,	3.66	4630	2.24	1290	2.24	1290	2.39	1625	2.96	2905
22,	2.98	2977	2.16	1070	2.26	1290	2.32	1444	2.76	2430
23,	2.61	2085	2.06	850	2.24	1290	2.29	1400	3.74	4880
24,	4.51	6845	2.06	850	2.19	1180	2.71	2315	4.66	7265
25,	3.86	5130	2.06	850	2.14	1070	3.42	4055	3.96	5380
26,	3.21	3505	2.04	850	2.09	960	2.94	2905	3.32	3805
27,	2.78	2499	2.00	740	2.06	850	2.52	1901	3.26	3630
28,	2.46	1740	------	762	2.06	850	2.24	1290	2.86	2665
29,	2.36	1570	2.02	784	2.04	850	2.34	1510	2.89	2785
30,	2.26	1290	2.04	850	2.04	850	2.39	1625	3.69	4755
31,	2.31	1400	------	------	2.06	850	------	------	4.06	5640

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT BINGHAMTON, N. Y.

1902.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.22	3555	2.56	1970	15.59	45940	5.20	8880	2.85	2665	2.35	1510	5.10	8580	4.90	7980	2.13	1026	4.57	6985	4.60	7125	2.75	2430
2,	3.39	4005	2.54	1970	19.22	60300	5.10	8580	2.85	2665	2.37	1554	4.23	6165	5.94	11240	2.13	1026	4.25	6165	4.07	5640	2.70	2384
3,	3.22	3555	2.56	1970	17.69	54300	4.87	7835	2.75	2430	2.30	1400	3.60	4505	5.27	9030	2.13	1026	3.67	4680	3.70	4755	2.85	2665
4,	3.56	4380	3.24	3630	13.79	38960	4.55	6985	2.65	2200	2.63	2154	3.87	5180	4.51	6845	2.15	1070	3.35	3880	3.47	4180	3.10	3265
5,	3.22	3555	2.96	2905	9.19	22220	4.20	6030	2.65	2200	3.07	3195	3.43	4080	3.77	4930	2.13	1026	2.90	2785	3.27	3680	3.33	3830
6,	3.14	3385	2.66	2200	6.36	12520	------	5640	2.67	2246	2.85	2665	3.97	5455	3.45	4130	2.07	894	2.93	2857	3.13	[illegible]	3.18	2460
7,	3.02	3075	2.72	2361	5.59	10120	3.90	5255	2.57	2016	2.63	2154	4.43	6705	3.37	3930	2.05	850	2.83	2617	3.07	3193	2.93	2857
8,	2.82	2593	2.74	2430	5.34	9340	3.83	5130	2.53	1924	2.57	2016	4.35	6435	3.10	3265	2.10	960	2.77	2476	3.00	3025	2.77	2476
9,	2.66	2200	2.79	2545	5.04	8430	4.75	7545	2.45	1740	2.65	2200	4.00	5510	2.97	2953	2.07	894	2.75	2430	2.83	2617	2.73	2384
10,	2.54	1970	2.72	2361	5.74	10600	5.40	9495	2.45	1740	2.60	2085	4.03	5640	2.83	2617	2.25	1290	2.67	2246	2.77	2476	2.85	2665
11,	2.52	1901	2.84	2665	5.59	10120	5.70	10440	2.35	1510	2.47	1786	4.77	7545	2.73	2384	2.25	1290	2.55	1970	2.70	2315	2.83	2617
12,	2.46	1740	2.64	2200	7.81	17270	5.45	9650	2.33	1466	2.47	1786	4.37	6435	2.75	2430	2.25	1290	2.67	2246	2.65	2200	2.95	2905
	2.57	2016	2.42	1671	11.19	29420	5.08	8430	2.30	1400	2.57	2016	3.43	4080	2.80	2545	2.23	1246	2.77	2476	2.65	2200	2.83	2617
14,	2.46	1740	2.34	1510	11.94	31940	4.70	7405	2.30	1400	2.57	2016	3.03	3100	2.75	2430	2.15	1070	2.90	2785	2.75	2430	2.67	2246
15,	2.34	1510	2.24	1290	10.61	27260	4.35	6435	2.27	1334	2.65	2200	2.75	2430	2.59	2085	2.15	1070	2.90	2785	2.67	2246	2.75	2430
16,	2.32	1444	2.26	1290	8.42	19350	3.97	5380	2.25	1290	2.65	2200	2.70	2315	2.49	1855	2.10	960	2.87	2713	2.55	1970	2.93	2857
	2.2	1290	2.19	1180	11.82	31580	3.70	4755	2.25	1290	2.53	1924	2.63	2154	2.40	1625	2.05	850	2.75	2430	2.55	1970	7.13	14930
		[illegible]	2.14	1070	11.87	31940	3.53	4330	2.15	1070	2.55	1970	2.65	2200	2.35	1510	2.05	850	2.60	2085	2.53	1924	7.65	16760
19,	2.42	1671	2.16	1070	9.47	23300	3.37	3930	2.15	1070	2.50	1855	2.65	2200	2.30	1400	2.05	850	2.50	1855	2.47	1786	6.70	13640
20,	2.64	2200	2.16	1070	6.82	13960	3.17	3435	2.15	1070	2.50	1855	7.27	15590	2.30	1400	2.00	740	2.60	2085	2.50	1855	5.87	10920
21,	2.14	1070	2.19	1180	5.72	10440	3.07	3195	2.25	1290	2.45	1740	10.90	28340	2.35	1510	1.95	630	2.75	2430	2.45	1740	5.28	9185
22,	2.56	1970	2.12	1004	5.49	9805	2.97	2953	2.33	1466	2.47	1786	11.35	29960	2.35	1510	1.95	630	2.73	2384	2.45	1740	9.45	23120
23,	4.76	7545	2.24	1290	5.61	10120	2.85	2665	2.35	1510	2.57	2016	10.00	25100	2.27	1334	2.00	740	2.57	2016	2.47	1786	10.62	27260
24,	5.16	8730	2.29	1400	5.76	10600	2.67	2246	2.25	1290	2.50	1855	8.90	21140	2.27	1334	1.97	674	2.53	1924	2.45	1740	8.20	18650
25,	4.22	6030	2.16	1070	5.44	9650	2.63	2154	2.20	1180	2.37	1554	8.10	18300	2.25	1290	2.00	740	2.53	1924	2.47	1786	6.28	12360
26,	3.39	4005	2.12	1004	4.92	7980	2.55	1970	2.37	1554	2.27	1334	6.37	12520	2.25	1290	2.35	1510	2.50	1855	2.53	1924	5.63	10280
27,	3.14	3385	2.42	1671	4.56	6985	2.50	1855	2.55	1970	2.37	1554	5.40	9495	2.20	1180	2.63	2154	2.45	1740	2.70	2315	4.98	8280
28,	3.07	4680	5.46	9650	4.44	6705	2.53	1924	2.53	1924	2.37	1554	7.51	16250	2.25	1290	2.55	1970	5.95	11240	2.85	2665	4.48	6845
29,	4.02	5510	------	------	5.30	9185	2.53	1924	2.47	1786	2.85	2665	6.07	11560	2.27	1334	5.00	8280	8.30	19000	2.90	2785	3.95	5380
30,	3.34	3880	------	------	5.70	10440	2.60	2085	2.40	1625	6.98	14600	5.00	8280	2.30	1400	3.80	5005	7.15	15095	2.83	2617	3.89	5005
31,	2.86	2665	------	------	5.53	9960	------	------	2.35	1510	------	------	5.55	9960	2.17	1114	------	------	5.53	9960	------	------	3.63	4580

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT BINGHAMTON, N. Y.

1903.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.40	4005	8.60	20060	12.92	35580	6.65	13480	2.33	1466	1.85	420	3.35	3880	2.55	1970	6.55	13160	2.07	894	3.25	3630	2.62	2131
2,	3.30	3755	7.20	15260	10.82	27980	5.85	10920	2.27	1334	1.87	462	3.00	3025	2.43	1694	5.17	8730	2.13	1026	3.07	3193	2.69	2315
3,	3.70	4755	7.23	15260	7.75	17100	5.15	8730	2.25	1290	1.85	420	2.73	2384	2.30	1400	4.30	6300	2.15	1070	2.95	2905	2.65	2200
4,	5.15	8730	8.27	19000	6.17	11880	5.05	8430	2.25	1290	1.80	315	2.57	2016	2.25	1290	3.70	4755	2.10	960	2.85	2665	2.65	2200
5,	5.33	9340	9.60	23660	5.63	10280	4.80	7690	2.23	1246	1.83	378	2.45	1740	2.50	1855	-----	3535	2.13	1026	2.85	2665	2.62	2131
6,	4.63	7265	7.95	17780	6.43	12840	4.33	6435	2.20	1180	1.80	315	2.35	1510	3.17	3435	------	3535	2.25	1290	3.05	3145	2.47	1786
7,	3.83	5080	6.35	12520	6.30	12360	4.17	5900	2.17	1114	1.77	252	2.27	1334	3.25	3630	- --	3535	2.35	1510	3.17	3435	2.52	1901
8,	3.75	4880	5.00	8280	6.35	12520	4.95	8130	2.15	1070	1.85	420	2.25	1290	3.03	3097	2.70	2315	2.70	2315	2.97	2953	2.52	1901
9,	3.45	4130	4.65	7265	10.75	27800	5.63	10280	2.15	1070	1.80	315	2.20	1180	2.80	2545	2.67	2246	7 97	17950	2.85	2665	2.57	2016
10,	6.05	11560	4.33	6435	10.55	27080	5.05	8430	2.10	960	1.80	315	2.17	1114	2.63	2154	2.55	1970	15.49	45550	2.75	2430	2.29	1400
11,	5.55	9960	4.20	6030	11.55	30680	4.70	7405	2.05	850	1.80	315	2.13	1026	2.73	2384	2.65	2200	16.35	48900	2.72	2361	2.45	1740
12,	5.93	11240	5.47	9650	11.47	30500	4.40	6570	2.05	850	2.77	2476	2.10	960	2.83	2617	2.67	2246	12.12	32660	2.67	2246	2.55	1970
13,	6.00	11400	6.95	14440	9.57	23660	4.03	5640	2.05	850	5.35	9340	2.10	960	2.70	2315	2.60	2085	8.17	18650	2.62	2131	2.65	2200
14,	6.07	11560	6.07	11560	7.75	17100	3.73	4830	2.05	850	3.45	4130	2.07	894	2.60	2085	2.50	1855	5.99	11400	2.59	2085	3.17	3435
15,	5.85	10920	4.97	8130	6.65	13480	4.05	5640	2.05	850	3.03	3097	2.13	1026	2.55	1970	2.37	1556	5.09	8580	2.52	1901	3.22	3555
16,	5.80	10760	4.40	6570	6.03	11560	3.97	5430	2.00	740	2.63	2154	2.07	894	2.43	1697	2.30	1400	4.49	6845	2.52	1901	3.12	3313
17,	5.53	9960	3.65	4630	5.55	9960	3.73	4830	2.00	740	2.50	1855	2.05	850	2.33	1466	2.37	1556	4.22	6030	5.70	10440	2.97	2953
18,	5.10	8580	3.13	3340	5.45	9650	3.47	4180	2.00	740	2.45	1740	2.10	960	2.30	1400	2.50	1855	7.55	16420	6.89	14280	2.85	2665
19,	4.60	7125	3.27	3680	5.13	8730	3.23	3580	2.00	740	2.35	1510	2.17	1114	2.27	1334	2.45	1740	7.89	17610	5.45	9650	2.79	2545
20,	4.15	5900	3.57	4430	4.75	7545	3.07	3193	1.95	630	2.30	1400	2.15	1070	2.27	1334	2.45	1740	6.55	13160	4.25	6165	2.62	2131
21,	4.30	6300	3.75	4880	4.50	6845	2.90	2785	1.95	630	2.53	1924	2.23	1246	2.45	1740	2.35	1510	5.47	9650	3.67	4680	4.37	6435
22,	6.53	13160	3.53	4330	5.60	10120	2.77	2476	1.95	630	3.77	4930	2.25	1290	2.65	2200	2.27	1334	4.82	7690	3.35	3880	5.39	9495
23,	6.63	13480	3.55	4380	7.57	16590	2.70	2315	1.95	630	4.45	6705	3.50	4255	2.40	1625	2.20	1180	4.25	6165	3.29	3755	4.97	8130
24,	5.63	10280	3.25	3630	12.11	32660	2.65	2200	1.87	462	5.03	8430	4.65	7265	2.30	1400	2.23	1246	4.02	5510	3.39	4005	4.25	6165
25,	4.80	7690	3.20	3505	11.48	30500	2.60	2085	1.85	420	4.43	6705	3.43	4080	2.25	1290	2.20	1180	3.92	5305	3.32	3805	4.05	5640
26,	4.53	6985	3.15	3385	9.20	22220	2.57	2016	1.85	420	3.97	5430	2.80	2545	2.70	2315	2.15	1070	3.67	4680	3.05	3145	3.79	5005
27,	4.23	6165	2.95	2905	7.15	15095	2.50	1855	1.87	462	3.40	4005	2.60	2085	4.13	5900	2.10	960	3.52	4305	2.87	2713	3.72	4805
28,	4.20	6030	6.80	13960	6.07	11560	2.45	1740	1.90	525	2.95	2905	2.45	1740	3.57	4130	2.10	960	3.45	4130	2.79	2545	3.45	4130
29,	5.35	9340	------	------	5.70	10440	2.40	1625	1.90	525	3.03	3097	2.35	1510	10.63	27200	2.10	960	3.45	4130	2.85	2665	3.57	4430
30,	9.68	24020	------	------	5.30	9185	2.35	1510	1.87	462	3.65	4630	2.47	1786	10.53	26900	2.07	894	3.42	4055	2.85	2665	3.65	4630
31,	10.23	25820	------	------	6.20	12040	------	------	1.85	420	------	------	2.70	2315	8.57	20060	------	------	3.35	3880	------	------	3.75	4880

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT BINGHAMTON, N. Y.

1904.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.28	3705	3.67	4680	3.57	4430	7.72	16930	5.06	8430	2.46	1763	2.02	784	2.40	1625	2.28	1356	4.12	5770	3.08	3217	2.98	2977
2,	3.35	3880	3.40	4005	3.29	3730	9.02	21500	4.53	6985	2.48	1809	1.99	718	2.35	1510	2.25	1290	3.35	3880	3.00	3025	2.82	2593
3,	a3.42	4055	3.59	4480	3.92	5305	......	17950	4.08	5770	2.38	1579	2.14	1048	2.98	2977	2.28	1356	2.90	2785	2.92	2833	2.85	2665
4,	3.88	5205	3.67	4680	6.65	6740	6.95	14440	3.68	4705	2.36	1532	2.14	1048	2.95	2905	2.28	1356	2.80	2545	2.88	2737	2.70	2315
5,	3.52	4305	3.55	4380	8.48	9815	6.20	12040	3.51	4280	2.38	1579	2.06	872	2.60	2085	2.20	1180	2.68	2269	2.82	2593	2.85	2665
6,	3.58	4455	3.15	3385	7.68	8410	6.15	11880	3.33	3830	2.41	1648	2.09	938	3.52	4305	2.22	1224	2.62	2131	2.80	2545	2.68	2269
7,	3.30	3755	4.42	6624	7.52	10100	6.35	12520	3.13	3337	2.46	1763	2.04	828	3.40	4005	2.28	1356	2.62	2131	2.92	2833	2.68	2269
8,	3.28	3705	10.49	26864	11.40	15070	6.98	14600	2.98	2977	2.57	2016	2.04	828	2.72	2361	2.22	1224	2.52	1901	2.90	2785	2.60	2085
9,	3.15	3385	11.92	32012	13.62	19000	7.14	15095	2.86	2689	3.67	4680	2.04	828	2.50	1855	2.22	1224	2.45	1740	2.80	2545	2.60	2085
10,	3.20	3505	10.85	28160	12.25	16600	8.74	20600	2.80	2545	4.23	6165	2.04	828	2.38	1579	2.20	1180	2.42	1671	2.75	2430	2.68	2269
11,	3.10	3265	8.62	20132	9.80	12190	8.24	18825	2.69	2292	3.43	4080	2.04	828	2.50	1855	2.18	1136	2.40	1625	2.75	2430	2.58	2039
12,	2.98	2977	7.15	15095	8.02	8970	6.94	14440	2.65	2200	2.93	2857	1.99	718	2.45	1740	2.18	1136	2.88	2737	2.75	2430	2.98	2977
13,	2.78	2499	6.00	11688	6.88	7140	6.09	11720	2.65	2200	2.65	2200	2.04	828	2.30	1400	2.20	1180	5.60	10120	2.70	2315	2.50	1855
14,	2.72	2361	5.27	9092	6.08	5860	5.51	9805	2.49	1832	2.50	1855	2.02	784	2.22	1224	2.15	1070	4.68	7405	2.70	2315	2.58	2039
15,	2.85	2665	4.77	7603	5.30	5000	4.97	8130	2.59	2062	2.43	1694	1.95	630	2.20	1180	3.00	3025	3.65	4630	2.68	2269	2.58	2039
16,	3.05	3145	6.12	11784	4.75	7545	4.61	7125	3.22	3555	2.45	1740	1.92	567	2.28	1356	3.10	3265	3.45	4130	2.70	2315	2.58	2039
17,	2.85	2665	b6.85	14120	4.28	6300	4.49	6845	3.45	4130	2.33	1466	2.05	850	2.22	1224	2.82	2593	2.95	2905	2.78	2499	2.60	2085
18,	3.00	3025	6.07	11624	3.85	5130	4.39	6570	3.17	3433	2.33	1466	2.28	1356	2.18	1136	2.55	1970	2.80	2545	2.75	2430	2.48	1809
19,	2.98	2977	5.67	10344	3.55	4380	4.49	6845	2.92	2833	2.23	1246	2.10	960	2.18	1136	2.42	1671	2.70	2315	2.65	2200	2.60	2085
20,	3.08	3217	5.22	8940	3.92	5305	4.37	6435	3.22	3555	2.17	1114	2.05	850	2.22	1224	2.35	1510	2.62	2131	2.65	2200	2.40	1625
21,	3.80	5005	4.72	7461	4.45	6705	4.17	5900	3.05	3145	2.20	1180	1.98	696	2.90	2785	2.30	1400	5.95	11240	2.82	2593	2.45	1740
22,	2.78	2499	4.52	6901	4.30	6300	3.97	5432	2.75	2430	2.13	1026	2.00	740	3.18	3457	2.30	1400	7.48	16250	3.58	4455	2.58	2039
23	7.02	14666	4.92	8040	7.42	15920	3.97	5432	2.67	2246	2.24	1048	1.98	696	4.55	6985	2.28	1356	6.95	14440	3.72	4805	2.40	1625
24,	7.82	17338	5.72	10504	11.40	30140	3.77	4930	2.59	2062	2.09	938	2.00	740	4.20	6030	2.18	1136	5.32	9185	3.55	4380	2.55	1970
25,	c8.27	18895	5.52	9867	12.12	32660	3.79	4980	2.62	2131	2.06	872	2.02	784	3.38	3955	3.52	4305	4.40	6570	3.38	3955	3.08	3217
26,	6.85	14120	4.67	7321	15.92	47110	3.96	5406	2.52	1901	2.02	784	2.02	784	2.92	2833	3.25	3630	4.40	6570	3.32	3805	3.15	3385
27,	5.95	11240	4.19	6004	15.70	46330	3.93	5330	2.49	1832	1.99	718	2.05	850	2.78	2499	3.22	3555	4.35	6435	3.18	3457	3.40	4005
28,	5.25	9030	3.75	4880	12.62	34470	5.83	5080	2.45	1740	1.99	718	2.52	1901	......	2154	2.85	2665	3.92	5305	2.90	2785	8.80	20780
29,	4.42	6624	3.67	4680	8.50	19700	6.30	12520	2.36	1532	2.04	828	2.58	2039	2.48	1809	2.65	2200	3.65	4630	2.78	2499	9.60	23660
30,	4.27	6219	......	......	6.90	14280	5.63	10280	2.36	1532	1.99	718	3.12	8313	2.38	1579	2.80	2545	3.42	4055	2.88	2737	7.05	14765
31,	3.89	5230	......	......	6.72	13640	......	......	2.36	1532	......	......	2.65	2200	2.35	1510	......	......	3.18	3457	......	......	5.25	9034

a Anchor ice. January 6, river frozen nearly across.
b Heavy anchor ice. River frozen over 2,000 ft. downstream from junction of the two rivers. Ice gorge caused backwater March 4-15.
c Current of stream very sluggish.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT BINGHAMTON, N. Y.

1905 Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.72	7462	3.04	------	2.38	------	9.08	21800	2.98	2980	2.25	1290	2.85	2660	2.98	2980	4.6	7120	2.56	1990	2.54	1950	5.35	9340
2,	4.7	7405	3.14	------	2.42	------	7.42	16000	2.85	2660	2.22	1220	3.05	3140	3.35	3880	3.6	4500	2.46	1760	2.56	1990	3.75	4880
3,	5.32	9247	3.07	------	2.08	------	6.22	12100	2.78	2500	2.25	1290	3.32	3800	3.0	3020	3.2	3500	2.48	1810	2.66	2220	8.67	20300
4,	4.52	6901	2.87	------	2.08	------	5.55	11000	2.72	2360	2.28	1360	2.92	2830	2.6	2080	6.12	11800	3.53	4330	2.61	2110	11.05	28900
5,	3.42	4055	2.87	------	2.15	------	6.9	14[illegible]00	2.62	2130	2.3	1400	2.8	2540	2.48	1810	10.6	27300	3.13	3340	2.51	1880	8.2	18600
6,	3.34	3855	2.74	------	2.1	------	7.48	16200	2.75	2430	2.9	2780	2.65	2200	2.38	1580	9.9	24700	2.78	2500	2.58	2040	6.1	11700
7,	5.84	10888	2.67	------	2.42	------	7.38	15900	2.9	2780	3.7	4760	2.52	1900	2.32	1440	6.48	12900	2.48	1810	3.01	3050	5.13	8680
8,	7.2	15260	2.79	------	2.08	------	6.7	13600	2.9	2780	3.1	3260	2.38	1580	2.32	1440	5.12	8640	2.38	1580	3.28	3700	4.73	7490
9,	5.87	10984	2.59	------	2.1	------	5.88	11000	2.75	2430	2.88	2740	2.35	1510	2.4	1620	4.35	6430	2.36	1540	3.21	3530	4.37	6490
10,	4.81	7719	2.54	------	2.15	------	5.38	9430	2.65	2200	2.82	2590	2.32	1440	2.3	1400	3.72	4800	2.33	1470	3.01	3050	4.23	6110
11,	4.06	5666	2.7	------	2.45	------	5.45	9650	2.7	2310	2.55	1970	2.25	1290	2.25	1290	3.5	4260	2.35	1510	2.84	2640	4.0	5510
12,	3.91	5281	3.0	------	2.48	------	6.28	12300	2.62	2130	2.48	1810	2.28	1360	2.32	1440	5.3	9180	5.57	11000	2.76	2450	3.74	4860
13,	4.73	7490	2.56	------	2.45	------	5.98	11300	2.55	1970	2.5	1860	2.18	1140	2.75	2430	5.5	10800	5.55	11000	2.74	2410	3.46	4160
14,	5.03	8370	3.13	------	2.48	------	5.2	8880	2.55	1970	2.52	1900	2.25	1290	2.7	2310	4.48	6790	4.22	6080	2.66	2220	3.46	4160
15,	4.26	6192	2.54	------	2.4	------	4.72	7460	2.6	2080	2.52	1900	2.15	1070	2.55	1970	3.75	4880	3.45	4130	2.64	2180	3.14	3360
16,	3.71	4780	2.92	------	2.3	------	4.66	7350	2.95	2900	2.35	1510	2.18	1140	2.88	2740	3.45	4130	3.09	3240	2.56	1990	2.76	2450
17,	3.49	4230	2.75	------	2.3	------	4.4	6570	2.92	2830	2.25	1290	2.15	1070	4.15	5900	3.35	3880	2.87	2710	2.56	1990	2.69	2290
18,	3.41	4030	2.8	------	2.8	------	4.25	6160	2.85	2660	2.2	1180	2.15	1070	4.15	5900	4.15	5900	2.79	2520	2.51	1880	2.96	2920
19,	3.51	4280	2.7	------	5.72	10504	4.05	5640	2.85	2660	2.3	1400	2.15	1070	3.32	3800	5.1	8580	2.79	2520	2.44	1720	2.76	2450
20,	3.19	3481	2.75	------	9.02	21572	3.75	4880	2.85	2660	2.42	1670	2.22	1220	2.92	2830	4.53	6930	3.55	4380	2.48	1810	2.76	2450
21,	3.05	3145	2.38	------	9.95	24920	4.0	5510	2.7	2310	2.7	2310	2.28	1360	2.75	2430	4.5	6840	3.52	4300	2.43	1690	2.96	2930
22,	2.95	2905	2.3	------	9.25	22400	4.78	7630	2.6	2080	7.52	16300	2.35	1510	2.52	1900	4.48	6790	3.32	3800	2.33	1470	4.82	7750
23,	2.72	2361	2.28	------	8.52	19776	4.28	6250	2.5	1860	7.3	15600	2.1	960	2.5	1860	3.76	4900	3.07	3190	2.3	1400	5.12	8640
24,	2.8	2545	2.42	------	8.18	18580	3.8	5000	2.42	1670	5.7	10400	2.42	1670	2.42	1670	3.43	4080	2.92	2830	2.27	1330	4.46	6740
25,	3.12	3313	2.2	------	12.65	34655	3.55	4380	2.38	1580	4.3	6300	2.05	850	2.4	1620	3.2	3500	2.85	2660	2.3	1400	3.66	4660
26,	3.25	3630	2.2	------	14.7	42430	3.35	3880	2.45	1740	3.6	4500	2.62	2130	2.32	1440	3.03	3100	2.69	2290	2.3	1400	3.26	3660
27,	3.3	------	2.65	------	13.9	39340	3.2	3500	2.45	1740	3.25	3630	2.32	1440	2.28	1360	2.86	2690	2.59	2060	2.33	1470	2.96	2930
28,	3.25	------	2.15	------	13.6	38200	2.08	916	2.45	1740	3.3	3760	2.15	1070	2.28	1360	2.73	2380	2.57	2020	2.35	1510	2.92	2830
29,	3.45	------	------	------	12.0	32300	2.9	2780	2.48	1810	3.3	3760	2.18	1140	2.25	1290	2.66	2220	2.49	1830	5.25	9030	3.09	3240
30,	3.35	------	------	------	10.6	27260	2.9	2780	2.32	1440	3.1	3260	2.18	1140	2.22	1220	2.62	2150	2.55	1970	7.03	14700	4.38	6520
31,	3.08	------	------	------	10.18	25748	------	------	2.28	1360	------	------	2.22	1220	3.42	4060	------	------	2.55	1970	------	------	4.22	6080

Note—During the entire frozen period there was an open channel of varying width at the gage. From January 26 to February 20, approximately the river was frozen entirely across a short distance below the gage. Ice finally broke up March 18.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT BINGHAMTON, N. Y.

1906.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.62	4560	3.3	3760	3.1	3260	8.12	18400	2.91	2810	4.0	5510	3.12	3310	2.08	920	2.2	1180	1.98	700	2.75	2430	2.9	2780
2,	3.28	3700	3.02	3070	3.08	3220	6.42	12700	2.91	2810	3.65	4630	3.66	4650	2.08	920	2.2	1180	2.02	780	2.65	2200	2.92	2830
3,	2.95	2900	2.72	2360	3.0	3020	5.45	9650	3.46	4150	3.33	3830	3.26	3650	2.1	960	2.15	1070	2.02	780	2.6	2080	2.85	2660
4,	3.08	3220	2.72	2360	6.9	14300	5.27	9090	5.01	8310	3.17	3430	2.99	3000	2.22	1220	2.15	1070	2.0	740	2.45	1740	2.48	1810
5,	4.02	5560	2.62	2130	9.3	22600	6.45	12800	4.31	6330	3.0	3020	2.79	2520	2.08	920	2.1	960	2.0	740	2.4	1620	2.8	2540
6,	4.45	6710	2.82	2590	6.35	12500	7.59	16600	3.78	4950	3.85	5130	2.74	2410	2.0	740	2.12	1000	2.0	740	2.32	1440	3.5	4260
7,	3.55	4380	2.85	2660	4.6	7120	6.72	13700	3.58	4450	4.23	6110	2.44	1720	2.0	740	2.1	960	1.95	630	2.28	1360	6.12	11800
8,	3.1	3200	2.68	2270	4.1	5770	5.82	10800	3.44	4100	3.75	4880	2.41	1650	2.78	2500	2.1	960	2.0	740	2.25	1290	3.92	5300
9,	2.88	2740	2.55	1970	3.75	4880	5.42	9560	3.28	3700	3.15	3380	2.36	1530	2.38	1580	2.02	780	2.02	780	2.22	1220	3.48	4200
10,	2.72	2360	2.62	2130	3.6	4510	7.12	15000	3.21	3530	3.45	4130	2.42	1670	2.22	1220	2.05	850	1.98	700	2.2	1180	3.52	4300
11,	2.88	2740	2.68	2270	3.5	4260	9.35	22800	3.28	3700	4.05	5640	2.64	2180	2.15	1070	2.02	780	2.0	740	2.22	1220	3.8	5000
12,	2.8	2540	2.98	2980	3.18	3460	8.49	19700	3.14	3360	4.3	6300	2.54	1950	2.05	850	1.9	520	1.98	700	2.32	1440	3.65	4630
13,	3.0	3020	2.42	1670	3.08	3220	7.19	15200	3.01	3050	3.55	4380	2.42	1670	2.05	850	1.9	520	1.98	700	2.4	1620	3.42	4060
14,	3.2	3500	2.45	1740	2.92	2830	6.47	12900	2.98	2980	3.13	3340	2.29	1380	2.02	780	------	------	1.92	570	2.42	1670	3.45	4130
15.	3.03	3220	2.48	1810	2.88	2740	8.92	21200	3.06	3170	2.86	2690	2.23	1250	1.98	700	1.85	420	2.0	740	2.4	1620	3.5	4260
16,	2.95	2900	2.45	1740	2.67	2250	9.64	23800	2.95	2900	2.86	2690	2.08	920	1.95	630	1.88	480	2.0	740	2.42	1670	5.9	11100
17,	2.92	2840	2.52	1900	2.79	2520	9.14	22000	2.9	2780	3.64	4600	2.13	1030	1.92	570	1.88	480	2.0	740	2.3	1400	5.9	11100
18,	3.1	3260	2.52	1900	2.72	2360	6.54	13100	3.0	3020	4.22	6080	2.28	1360	1.9	530	1.9	520	1.98	700	2.45	1740	4.75	7550
19	3.05	3140	2.38	1580	2.67	2250	5.58	10100	3.03	3100	4.86	7860	2.31	1420	1.85	420	1.75	210	2.0	740	5.18	8820	3.45	4130
20,	2.85	2660	2.35	1510	2.47	1790	5.01	8310	2.85	2660	4.42	6620	2.31	1420	1.9	530	1.8	310	4.25	6160	6.1	11700	3.1	3260
21,	2.98	2980	2.45	1740	2.67	2250	4.61	7150	2.7	2310	3.86	5150	2.28	1360	2.0	740	1.85	420	3.8	5000	5.32	9240	3.2	3500
22,	4.75	7550	4.0	5510	2.85	2660	4.36	6460	2.5	1860	3.39	3980	2.23	1250	2.28	1360	1.92	570	3.6	4500	5.12	8640	3.4	4000
23,	7.55	6980	5.8	10800	2.85	2660	4.44	6680	2.47	1790	3.06	3170	2.15	1070	2.3	1400	1.92	570	3.0	3020	4.88	7920	3.1	3260
24,	9.6	23700	5.32	9240	2.42	1670	4.26	6190	2.43	1670	2.96	2930	2.33	1470	2.45	1740	1.92	570	2.62	2130	4.2	6030	2.75	2430
25,	8.1	18300	5.2	8880	2.39	1600	3.88	5200	2.4	1620	2.84	2590	2.21	1200	2.28	1360	2.02	780	2.5	1860	3.65	4630	2.7	2310
26,	5.95	11200	5.78	10700	2.42	1670	3.56	4400	2.85	2660	2.69	2290	2.21	1200	2.15	1070	2.08	920	2.58	2040	3.45	4130	3.05	3140
27,	4.8	7690	5.18	8820	3.59	4480	3.36	3900	4.43	6650	2.56	1990	2.16	1090	2.38	1580	2.02	780	2.52	1900	3.28	3700	2.65	2200
28,	4.32	6350	3.6	4510	9.72	24100	3.16	3410	7.55	16400	2.44	1720	2.05	850	2.55	1970	1.95	630	2.7	2310	3.2	3500	2.65	2200
29,	3.95	5380	------	------	9.35	22800	3.04	3120	7.7	16900	2.56	1990	2.08	920	3.15	3380	1.95	630	2.68	2270	3.22	3550	2.6	2080
30,	3.62	4560	------	------	7.17	15200	2.94	2880	5.9	11100	2.64	2180	2.12	1000	2.82	2590	1.9	520	2.6	2080	3.1	3260	2.65	2200
31,	3.4	4000	------	------	9.42	23000	------	......	4.7	7400	------	------	2.05	850	2.55	1970	---	---	2.62	2130	------	------	4.5	6840

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT BINGHAMTON, N. Y.

1907.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	8.6	20100	2.75	2450	2.3	1380	4.95	8140	5.85	10900	2.4	1610	2.25	1260	2.15	1030	1.75	270	2.95	2940	3.85	5210	3.05	3200
2,	9.0	21500	2.65	2210	2.3	1380	4.3	6380	5.95	11200	2.45	1730	2.3	1380	2.05	810	1.8	335	2.8	2570	3.5	4320	2.95	2940
3,	6.15	11900	3.05	3200	2.35	1490	3.95	5470	5.05	8430	2.4	1610	2.35	1500	2.1	920	1.8	335	2.6	2090	5.3	9180	2.8	2570
4,	7.45	16100	3.5	4320	2.4	1610	3.7	4820	4.9	8000	2.4	1610	2.5	1850	2.05	810	1.8	335	2.8	2570	5.65	10300	2.8	2570
5,	9.7	24000	2.95	2940	2.2	1150	3.55	4440	4.55	7050	2.45	1730	2.35	1500	2.1	920	2.1	920	5.05	8430	4.75	7600	2.45	1730
6,	7.4	15900	2.75	2450	2.25	1260	3.45	4200	4.25	6250	2.45	1730	2.2	1150	2.05	810	2.2	1150	4.75	7600	4.2	6120	2.6	2090
7,	6.1	11700	2.95	2940	2.35	1490	3.4	4070	4.15	5990	2.65	2210	2.1	920	2.0	700	2.25	1260	4.2	6120	9.1	21900	2.7	2330
8,	6.4	12700	2.75	2450	2.05	810	3.15	3440	4.7	7460	2.9	2820	2.15	1030	2.05	810	2.3	1380	5.1	8580	9.8	24400	2.6	2090
9,	7.15	15100	2.65	2210	2.1	920	3.25	3700	4.35	6510	2.75	2450	2.1	920	2.0	700	2.3	1380	6.9	14300	8.5	19700	2.8	2570
10,	6.1	11700	2.35	1490	2.15	1030	3.35	3940	4.25	6250	2.6	2090	2.1	920	2.05	810	2.35	1500	5.9	11100	7.1	14900	10.1	25500
11,	4.85	7860	2.35	1490	2.2	1150	3.55	4440	4.05	5730	2.5	1850	2.0	700	2.0	700	5.35	9330	4.65	7320	5.75	10600	12.55	34300
12,	4.3	6380	2.85	2700	2.1	920	3.45	4200	3.85	5210	2.4	1610	2.1	920	2.0	700	5.4	9490	4.7	7460	5.15	8730	10.25	26000
13,	3.9	5340	2.6	2090	2.05	810	3.65	4700	3.55	4440	2.35	1500	2.65	2210	1.9	500	4.25	6250	4.9	8000	4.5	6920	7.1	14900
14,	3.95	2940	2.3	1380	2.15	1030	3.7	4820	3.25	3700	2.25	1260	2.6	2090	1.95	600	3.4	4070	4.2	6120	4.2	6120	5.75	10600
15,	4.45	6780	2.75	2450	3.7	4820	3.75	4950	3.1	3320	2.15	1030	2.45	1730	1 9	500	2.85	2700	3.8	5080	3.9	5340	5.35	9330
16,	4.15	5990	2.3	1380	7.05	14800	3.65	4700	3.05	3200	2.15	1030	2.3	1380	1.8	335	2.6	2090	3.45	4200	3.55	4440	4.95	8140
17,	3.3	3820	2.3	1380	7.05	14800	3.55	4440	3.0	3070	2.15	1030	2.2	1150	1.85	420	2.5	1850	3.25	3700	3.45	4200	4.7	7460
18,	2.9	2820	2.25	1260	7.2	15300	3.45	4200	3.0	3070	2.15	1030	2.2	1150	1.75	270	2.35	1500	2.85	2700	3.25	3700	4.35	6510
19,	3.4	4070	2.2	1150	7.35	15800	3.45	4200	3.05	3200	2.15	1030	2.25	1260	1.6	115	2.4	1610	2.7	2330	3.2	3570	4.1	5860
20,	6.25	12200	2.6	2090	5.9	11100	3.35	3940	3.1	3320	2.15	1030	2.5	1850	1.6	115	2.3	1380	2.6	2090	3.2	3570	3.8	5080
21,	6.9	14300	2.3	1380	4.55	7060	3.15	3440	2.95	2940	2.15	1030	2.45	1730	1.65	160	2.25	1260	2.65	2210	3.2	3570	3.7	4820
22,	4.7	7460	2.45	1730	4.7	7460	3.1	3320	2.75	2450	2.1	920	2.35	1500	1.65	160	2.3	1380	2.85	2700	3.1	3320	3.5	4320
23,	2.8	2570	2.2	1150	8.0	17900	2.95	2940	2.6	2090	2.1	920	2.35	1500	1.8	335	2.45	1730	2.85	2700	3.05	3200	5.1	8580
24,	2.9	2820	2.3	1380	8.95	21300	3.25	3700	2.55	1970	2.05	810	2.4	1610	1.85	420	2.55	1970	2.65	2210	3.0	3070	10.35	26400
25,	2.95	2940	2.45	1730	8.15	18500	5.8	10800	2.45	1730	2.05	810	2.4	1610	1.9	500	2.5	1850	2.5	1850	2.95	2940	10.1	25500
26,	3.2	3570	2.5	1850	6.9	14300	5.8	10800	2.6	2090	2.0	700	2.4	1610	1.85	420	2.5	1850	2.5	1850	2.85	2700	7.4	15900
27,	2.9	2820	2.65	2210	6.1	11700	7.95	17800	2.55	1970	2.0	700	2.5	1850	1.8	335	2.5	1850	2.5	1850	3.0	3070	6.0	11400
28,	3.2	3570	2.55	1970	6.1	11700	7.05	14800	2.7	2330	2.1	920	2.45	1730	1.75	270	2.35	1500	3.7	4820	3.0	3070	6.0	11400
29,	3.15	3440	------	------	7.1	14900	6.45	12800	2.7	2330	2.1	920	2.45	1730	1.8	335	2.2	1150	5.85	10900	3.15	3440	7.35	15800
30,	3.0	3070	------	------	6.8	14000	6.4	12700	2.65	2210	2.15	1030	2.35	1500	1.85	420	2.5	1850	5.35	9330	3.1	3320	6.4	12700
31,	3.0	3070	------	------	------	------	------	------	2.5	1850	------	------	2.25	1260	1.75	270	------	------	4.35	6510	------	------	6.6	13300

Note—Ice conditions at this station largely in the form of anchor ice obstruction. Portions of January to March and December, 1907, liable to error from this cause. The river was frozen part way across below the gaging sta tion. It seldom freezes over at the gage.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT BINGHAMTON, N. Y.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.8	10800	2.4	1610	3.05	3200	6.85	14100	5.65	10300	3.05	3190	2.1	920	2.0	700	1.8	335	1.85	420	2.25	1260	2.05	810
2,	4.95	8140	2.8	2570	3.4	4070	6.45	12800	6.25	12200	2.9	2820	2.05	810	1.9	500	1.9	500	1.9	500	2.1	920	2.15	1030
3,	4.4	6650	3.2	3570	4.35	6510	5.75	10600	6.15	11900	2.75	2450	2.05	810	1.9	500	1.8	335	1.9	500	2.15	1030	2.05	810
4,	3.95	5470	2.7	2330	5.05	8430	5.15	8730	5.65	10300	2.6	2090	2.1	920	1.85	420	1.8	335	1.7	210	2.05	810	1.95	600
5,	3.65	4700	3.05	3200	4.3	6380	4.75	7590	4.9	8900	2.5	1850	2.05	810	1.9	500	1.75	270	1.9	500	2.05	810	1.85	420
6,	2.75	2450	2.8	2570	3.65	4700	4.75	7590	4.15	5990	2.5	1850	2.1	920	1.85	420	1.6	115	1.9	500	2.1	920	1.85	420
7,	2.9	2820	2.85	2700	3.75	4950	5.2	8880	5.15	8730	2.4	1610	2.2	1150	1.8	335	1.8	335	1.9	500	2.1	920	2.05	810
8,	3.1	3320	2.85	2700	3.45	4200	4.85	7860	7.9	17600	2.35	1500	2.1	920	1.85	420	1.8	335	1.9	500	1.95	600	2.05	810
9,	3.45	4200	3.05	3200	3.15	3440	7.45	16100	8.15	18500	2.2	1150	2.1	920	1.8	335	1.85	420	1.95	600	2.05	810	2.05	810
10,	3.45	4200	2.8	2570	3.05	3200	6.95	14400	7.75	17100	2.3	1380	2.05	810	1.8	335	1.8	335	2.0	700	2.05	810	2.25	1260
11,	3.1	3320	3.1	3320	2.95	2940	6.15	11900	6.55	13200	2.2	1150	1.9	500	1.85	420	1.65	165	1.8	335	2.1	920	2.2	1150
12,	3.05	3200	2.65	2210	3.45	4200	5.45	9640	5.8	10800	2.4	1610	1.95	600	1.8	335	1.6	115	1.95	600	2.05	810	2.1	920
13,	4.55	7050	2.6	2090	5.15	8730	4.9	8000	4.85	7860	2.3	1380	1.95	600	1.8	335	1.55	80	1.9	500	2.15	1030	2.05	810
14,	4.6	7190	2.55	1970	10.05	25300	4.6	7190	4.5	6920	2.3	1380	2.0	700	1.8	335	1.7	210	1.85	420	2.15	1030	2.15	1030
15,	3.95	5470	9.55	23500	11.55	30700	4.35	6510	5.3	9180	2.3	1380	2.0	700	1.8	335	1.65	165	1.8	335	2.15	1030	2.25	1260
16,	3.55	4440	13.65	38400	12.15	32800	5.7	10400	5.05	8430	2.3	1380	1.95	600	1.8	335	1.7	210	1.8	335	2.15	1030	2.15	1030
17,	3.05	3200	12.4	33700	9.75	24200	5.05	8430	4.55	7050	2.25	1260	1.9	500	1.85	420	1.65	165	1.7	210	2.1	920	2.25	1260
18,	3.0	3070	8.05	18100	6.95	14400	4.45	6780	4.0	5600	2.2	1150	1.95	600	1.9	500	1.65	165	1.7	210	2.1	920	2.15	1030
19,	2.95	2940	5.95	11200	6.85	14100	4.65	7320	3.7	4820	2.25	1260	1.9	500	1.85	420	1.6	115	1.9	500	2.05	810	2.15	1030
20,	2.95	2940	4.85	7860	5.75	10600	5.65	10300	3.35	3940	2.25	1260	1.9	500	1.8	335	1.5	45	1.8	335	2.1	920	2.1	920
21,	2.75	2450	4.4	6650	5.05	8430	5.4	9490	3,25	3700	2.2	1150	1.9	500	1.8	335	1.7	210	1.95	600	2.15	1030	2.3	1380
22,	2.85	2700	4.05	5730	4.75	7600	4.75	7590	3,25	3700	2.2	1150	1.9	500	1.8	335	1.65	165	1.8	335	2.1	920	2.15	1030
23,	2.85	2700	3.75	4950	4.95	8140	4.45	6780	3.15	3440	2.2	1150	1.95	600	1.75	270	1.8	335	1.9	500	2.15	1030	2.25	1260
24,	3.0	3070	3.4	4070	7.1	14900	4.15	5990	3.45	4200	2.1	920	2.05	810	1.75	270	1.65	165	1.9	500	2.15	1030	2.05	810
25,	2.8	2570	3.35	3940	8.65	20200	3.85	5210	3.3	3820	2.2	1150	2.75	2450	1.8	335	1.7	210	1.65	165	2.05	810	2.1	920
26,	2.7	2330	3.25	3700	7.6	16600	3.65	4700	3.05	3200	2.2	1150	2.35	1500	1.8	335	1.7	210	1.85	420	2.05	810	2.15	1030
27,	2.75	2450	3.6	4570	8.85	21000	3.55	4440	2.9	2820	2.15	1030	2.2	1150	1.8	335	1.55	80	1.85	420	2.1	920	2.2	1150
28,	2.95	2940	3.85	5210	10.3	26200	3.9	5340	2.8	2570	2.1	920	2.05	810	1.8	335	1.75	270	2.05	810	2.05	810	2.05	810
29	2.75	2450	3.45	4200	11.85	31800	3.75	4950	2.7	2330	2.05	810	2.1	920	1.8	335	1.9	500	2.15	1030	2.0	700	2.05	810
30	2.85	2700	------	------	10.85	28200	3.65	4700	2.65	2210	2.05	810	2.0	700	1.65	165	1.85	420	2.1	920	2.05	810	2.0	700
31	2.45	1730	------	------	8.35	26400	-----	------	2.75	2450	------	------	2.0	700	1.8	335	------	------	2.25	1260	------	------	2.1	920

Note—Discharge affected by ice conditions February 1 to 14 and during the greater portion of December, 1908. It may also have been slightly affected during the last week of January, 1908.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT BINGHAMTON, N. Y.

1909.	JAN		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.05	810	2.75	2450	5.2	8880	5.05	8430	7.65	16800	2.6	2090	2.3	1380	2.0	700	1.9	500	1.8	335	1.95	600	2.0	700
2,	2.05	810	3.15	3440	4.65	7320	5.1	8580	8.75	20600	2.45	1730	2.2	1150	2.05	810	1.9	500	1.85	418	2.0	700	2.1	920
3,	2.1	920	3.0	3070	4.5	6920	5.6	10100	7.0	14600	2.4	1610	2.2	1150	2.1	920	1.9	500	1.8	335	2.0	700	2.15	920
4,	2.3	1380	3.0	3070	4.45	6780	5.7	10400	7.45	16100	2.4	1610	2.2	1150	2.05	810	1.9	500	1.85	418	1.95	600	2.1	920
5,	3.65	4700	2.95	2940	3.95	5470	5.55	9960	7.0	14600	2.5	1850	2.2	1150	2.05	810	1.9	500	1.9	500	2.0	700	2.1	1040
6,	8.4	19400	4.7	7400	3.4	4070	5.3	9180	6.05	11600	3.15	3440	2.1	920	2.05	810	1.85	418	1.8	335	2.0	700	2.1	920
7,	7.05	14800	6.6	13300	3.65	4700	5.9	11100	6.45	12800	3.02	3120	2.0	700	2.0	700	1.95	600	1.8	335	1.85	418	2.1	920
8,	4.85	7860	5.7	10400	3.52	4370	6.55	13200	5.8	10800	2.75	2450	2.1	920	1.9	500	1.88	467	1.8	335	2.0	700	2.1	920
9,	3.58	4520	4.3	6380	3.42	4120	6.1	11700	5.3	9180	2.6	2090	2.15	1040	2.0	700	1.85	418	1.8	335	2.0	700	2.1	800
10,	3.4	4070	3.75	4950	5.0	8280	5.25	9030	4.6	7190	2.55	1970	2.15	1040	2.0	700	1.9	500	1.8	335	2.05	810	2.2	700
11,	3.4	4070	4.65	7320	7.65	16800	4.85	7860	5.85	10900	3.95	5470	2.1	920	2.0	700	1.95	600	1.9	500	1.95	600	2.1	700
12,	3.2	3570	4.3	6380	6.8	14000	4.35	6520	6.02	11500	3.25	3700	2.0	700	1.9	500	1.85	418	1.85	418	1.9	500	2.0	700
13	2.8	2570	4.0	5600	5.2	8880	4.05	5730	5.0	8280	3.0	3070	2.0	700	1.85	418	1.95	600	2.0	700	1.9	500	2.1	800
14,	2.6	2090	3.92	5390	4.9	8000	6.0	11400	4.45	6780	3.7	4820	1.95	600	1.95	600	2.0	700	1.85	418	1.85	418	2.25	1260
15,	2.75	2450	5.0	8280	4.4	6650	9.7	24000	4.7	7460	3.6	4570	2.0	700	1.85	418	1.9	500	1.85	418	1.85	418	2.3	1380
16,	3.05	3200	6.2	12000	3.95	5470	8.8	20800	4.4	6650	3.2	3570	2.0	700	1.9	500	1.9	500	1.8	335	1.95	600	2.5	1850
17,	3.0	3070	7.55	16400	3.7	4820	7.3	15600	4.12	5910	2.8	2570	2.0	700	1.95	600	1.9	500	1.8	335	1.9	500	2.3	1380
18,	2.6	2090	6.2	12000	3.45	4200	6.4	12700	4.3	6380	3.5	4320	2.15	1040	2.1	920	1.95	600	1.8	335	2.0	700	2.4	1100
19,	2.5	1850	4.8	7730	3.4	4070	5.55	9960	3.9	5340	3.3	3820	2.1	920	2.5	1850	1.85	418	1.9	500	1.95	600	2.2	1000
20,	2.6	2090	11.95	32100	3.2	3570	5.3	9180	3.6	4570	3.1	3320	2.1	920	2.4	1610	1.85	418	1.8	335	1.95	600	2.1	920
21,	2.58	2040	12.35	33600	3.2	3570	5.05	8430	3.4	4070	2.8	2570	2.0	700	2.35	1500	1.95	600	1.8	335	1.8	335	2.4	800
22,	2.7	2330	10.0	25100	2.95	2940	4.9	8000	3.2	3570	2.7	2330	2.0	700	2.2	1150	1.85	418	1.85	418	1.9	500	2.1	800
23,	2.75	2450	7.05	14800	2.95	2940	4.7	7460	3.1	3320	2.6	2090	2.0	700	2.15	1040	1.8	335	1.9	500	1.95	600	2.1	700
24,	3.55	4440	8.5	19700	2.85	2700	4.3	6380	3.0	3070	2.5	1850	2.0	700	2.15	1040	1.9	500	1.9	500	2.0	700	2.1	700
25,	10.6	27300	11.1	29100	3.75	4950	4.0	5600	2.85	2700	2.55	1970	2.1	920	2.1	920	1.85	418	2.0	700	2.0	700	2.1	600
26,	9.35	22800	9.9	24700	7.9	17600	3.7	4820	2.75	2450	2.5	1850	2.2	1150	2.1	920	1.8	335	2.0	700	1.95	600	2.0	600
27,	6.7	13600	7.1	14900	6.85	14100	3.75	4950	2.7	2330	2.7	2330	2.2	1150	2.05	810	1.8	335	2.1	920	2.0	700	2.05	600
28,	5.0	8280	6.35	12500	6.4	12700	3.6	4570	2.68	2280	2.55	1970	2.2	1150	2.0	700	1.9	500	2.1	920	1.95	600	2.0	600
29,	4.05	5730	------	------	6.3	12400	3.5	4320	2.7	2330	2.35	1500	2.2	1150	2.0	700	1.8	335	2.0	700	2.0	700	2.15	500
30,	3.9	5340	------	------	5.95	11200	5.6	10100	2.7	2330	2.3	1380	2.15	1040	2.1	920	1.8	335	2.0	700	2.0	700	2.25	500
31,	3.5	4320	------	------	5.4	9490	------	------	2.6	2090	------	------	2.1	920	2.0	700	------	------	1.9	500	------	------	2.15	500

Note:—Gage heights from January 1st to February 6th and December 9th to 31st probably affected by anchor ice, more or less.

Daily discharge January 1st to February 6th slightly affected, at times, by anchor ice. Open-channel rating applied throughout. Discharges December 9th to 31st, affected by ice. These have been corrected and verified by intercomparisons with other stations in the Susquehanna drainage. Daily discharges January 1st to December 8th, have been obtained from a well defined rating curve below 6 feet. The upper part of the curve is based on one measurement at 16.3 feet.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT BINGHAMTON, N. Y.

1910. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.2	600	3.15	3440	14.95	43400	3.85	5210	3.5	4320	3.55	4440	2.4	1610	1.75	272	1.8	335	2.1	920	1.9	500	2.5	1850
2,	2.1	600	3.0	3070	17.65	54100	3.6	4570	3.5	4320	3.7	4820	2.35	1510	1.9	500	1.8	335	2.1	920	1.95	600	2.5	1850
3,	2.1	600	3.0	3070	15.45	45400	3.4	4070	3.6	4570	3.65	4700	2.3	1380	1.8	335	1.88	467	2.0	700	1.9	500	2.45	1730
4,	2.05	600	3.0	3070	13.40	37400	3.2	3570	4.55	7060	3.3	3820	2.3	1380	1.75	272	1.8	335	2.0	700	1.9	500	2.4	1610
5,	2.45	600	2.8	2570	10.6	27300	3.15	3440	4.0	5600	3.1	3320	2.2	1150	1.8	335	1.85	418	2.0	700	2.0	700	2.4	1610
6,	2.2	600	3.0	3070	10.2	25800	3.05	3200	3.7	4820	3.25	3700	2.2	1150	1.8	335	1.9	500	1.95	600	2.0	700	2.3	1380
7,	2.6	600	2.5	1850	12.25	33200	3.0	3070	3.2	3570	4.4	6650	2.15	1040	1.75	272	2.2	1150	2.05	810	2.0	700	2.15	1040
8,	2.75	600	2.5	1850	11.2	29400	3.0	3070	3.1	3320	4.9	8000	2.15	1040	1.7	210	2.05	810	2.05	810	2.2	1150	2.3	700
9,	2.65	600	2.5	1850	9.1	21900	3.1	3320	3.1	3320	4.3	6380	2.2	1150	1.75	272	2.0	700	1.95	600	2.2	1150	2.28	700
10,	2.6	600	2.8	1200	7.22	15300	2.9	2820	3.15	3440	3.8	5080	2.1	920	1.8	335	2.0	700	2.05	810	2.2	1150	2.1	700
11,	2.45	600	2.65	1200	6.2	12000	2.9	2820	3.1	3320	3.65	4700	2.1	920	1.9	500	1.85	418	2.0	700	3.0	3070	2.2	700
12,	2.35	600	2.6	1200	5.6	10100	2.9	2820	3.0	3070	4.5	6920	2.15	1040	1.85	418	1.9	500	1.95	600	2.85	2700	2.2	700
13,	2.4	600	2.6	1200	5.6	10100	3.3	3820	2.85	2700	4.5	6920	2.0	700	1.85	418	1.95	600	1.8	335	2.8	2570	2.2	700
14.	2.4	600	2.4	1200	5.4	9500	3.1	3320	2.75	2450	4.05	5730	1.95	600	1.8	335	1.95	600	1.8	335	2.65	2210	------	700
15,	2.3	600	2.55	1200	4.95	8140	2.9	2820	2.7	2330	3.55	4440	1.95	600	1.8	335	1.9	500	1.9	500	2.55	1970	------	700
16,	2.3	600	2.55	1200	4.6	7190	2.7	2330	2.6	2090	3.3	3820	2.0	700	1.8	335	1.9	500	1.7	210	2.6	2090	------	700
17,	2.35	600	2.6	1200	4.25	6250	2.6	2090	2.55	1970	3.35	3940	2.0	700	1.85	418	1.85	418	1.9	500	2.5	1850	2.2	700
18,	2.3	600	2.75	1200	4.0	5600	2.65	2210	2.5	1850	3.3	3820	2.0	700	1.85	418	1.8	335	1.88	467	2.45	1730	2.3	700
19,	2.6	600	2.7	1200	3.8	5080	2.8	2570	2.5	1850	4.3	6380	1.95	600	1.8	335	1.95	600	1.85	418	2.4	1610	2.2	700
20,	3.2	600	2.8	1200	4.1	5860	3.35	3940	2.5	1850	3.85	5210	1.95	600	1.85	418	1.9	500	1.9	500	2.4	1610	2.2	700
21,	3.6	600	2.8	1200	5.65	10300	3.15	3440	2.5	1850	3.5	4320	1.9	500	1.75	272	1.95	600	1.85	418	2.4	1610	2.15	700
22,	9.0	21500	3.7	1200	5.8	10800	3.0	3070	2.4	1610	3.05	3200	2.0	700	1.7	210	1.85	418	1.85	418	2.25	1260	2.22	700
23,	9.1	21900	4.1	1200	5.55	10000	2.9	2820	2.5	1850	2.85	2700	1.9	500	1.8	335	1.85	418	1.7	210	2.3	1380	2.2	700
24,	7.7	16900	3.9	1200	5.7	10400	2.9	2820	2.4	1610	2.7	2330	1.85	418	1.8	335	1.9	500	1.9	500	2.35	1500	2.25	700
25,	6.0	11400	3.4	1200	5.9	11100	3.25	3700	2.55	1970	2.65	2210	1.9	500	1.8	335	1.7	210	1.85	418	2.5	1850	2.6	700
26,	4.95	8140	3.55	1200	6.35	12500	3.25	3700	6.5	13000	2.6	2090	1.9	500	1.75	272	1.85	418	1.9	500	2.6	2090	2.75	700
27,	4.25	6250	3.2	1200	5.9	11100	4.1	5860	5.7	10400	2.5	1850	1.95	600	1.8	335	1.85	418	1.8	418	2.55	1970	2.65	700
28,	4.0	5600	9.75	24200	5.1	8580	4.1	5860	4.9	8000	2.55	1970	1.9	500	1.75	272	1.95	600	1.9	500	2.5	1850	2.55	700
29,	3.75	4950	------	------	4.5	6920	3.6	4570	4.1	5860	2.5	1850	1.9	500	1.7	210	1.75	272	1.8	335	2.5	1850	2.75	700
30,	3.1	3320	------	------	4.3	6380	3.65	4700	3.55	4440	2.5	1850	1.9	500	1.8	335	1.9	500	1.65	162	2.5	1850	4.4	700
31.	3.15	3440	------	------	4.0	5600	------	------	3.5	4320	------	------	1.85	418	1.75	272	------	------	1.9	500	------	------	5.1	700

Note:—Relation of gage height to discharge probably affected by ice from January 1 to 21, February 10 to 27 and December 6 to 31. Gage readings to water surface.

Daily discharge determined from a rating curve somewhat poorly defined. Discharge for ice periods estimated. (See "Estimated Monthly Discharge" for 1910.)

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT BINGHAMTON, N. Y.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.4	6120	3.5	3790	3.15	1400	5.4	8880	2.9	2330	2.26	974	2.34	1130	1.92	436	2.16	792	2.24	936	3.1	2810	3.5	3790
2,	5.1	8040	3.15	2930	2.8	1200	4.7	6930	3.15	2930	2.38	1200	2.26	774	1.94	462	2.16	792	2.6	1650	3.35	3420	3.4	3540
3,	8.6	18500	3.35	2400	2.65	1100	4.3	5850	3.6	4040	2.28	1010	2.24	936	1.92	436	2.09	675	2.5	1440	3.25	3170	3.2	3050
4,	8.3	17600	2.9	2000	2.6	1000	4.1	5320	3.35	3420	2.28	1010	2.18	826	1.90	410	2.05	615	2.43	1300	3.0	2570	2.95	2450
5,	6.3	11500	3.0	2200	2.85	1000	4.8	7200	3.15	2930	2.19	843	2.19	843	1.92	436	2.01	555	2.43	1300	2.8	2100	2.7	1870
6,	4.6	6660	2.8	1800	2.35	900	8.8	19200	2.95	2450	2.3	1050	2.25	955	1.92	436	2.00	540	2.37	1180	2.75	1980	2.6	1650
7,	4.6	6660	2.8	1500	2.35	900	11.6	28400	2.8	2100	2.55	1540	2.22	898	1.95	475	2.12	724	2.6	1650	3.0	2570	2.5	1440
8,	4.1	5320	2.6	1400	2.4	800	11.1	26700	2.75	1980	2.65	1760	2.17	809	1.96	488	2.12	724	2.65	1760	3.05	2690	2.5	1440
9,	4.1	5320	2.85	1200	2.4	800	8.6	18500	2.65	1760	2.55	1540	2.11	707	1.89	399	2.24	936	2.65	1760	3.15	2930	2.48	1400
10,	3.7	4290	2.95	1100	2.5	1100	7.4	14800	2.6	1650	2.46	1360	2.08	660	1.9	410	2.9	2330	2.65	1760	3.0	2570	2.8	2100
11,	3.5	3790	2.7	1000	2.6	1650	6.5	12000	2.5	1440	2.42	1280	2.16	792	1.82	322	3.1	2810	2.65	1760	2.9	2330	3.0	2570
12,	3.8	4540	2.75	1000	2.8	2100	6.0	10600	2.5	1440	3.1	2810	2.12	724	1.84	344	2.8	2100	2.6	1650	2.8	2100	3.1	2810
13,	4.5	6390	2.65	1000	3.1	2810	5.6	9440	2.5	1440	5.2	8320	2.08	660	1.88	388	2.6	1650	2.5	1440	3.05	2690	3.3	3290
14,	6.0	10600	2.5	900	3.45	3660	5.5	9160	2.38	1200	6.2	11200	2.06	630	1.86	366	2.48	1400	2.44	1320	3.3	3290	3.8	4540
15,	6.9	13200	2.5	900	4.2	5580	7.2	14200	2.37	1180	5.2	8320	2.04	600	1.83	333	2.44	1320	2.42	1280	3.2	3050	3.9	4800
16,	5.5	9160	2.5	800	4.3	5850	6.7	12600	2.32	1090	4.35	5980	1.99	527	1.82	322	2.34	1130	2.37	1180	3.05	2690	4.8	7200
17,	4.1	5320	2.5	800	3.85	4670	5.8	10000	2.3	1050	------	*5200	2.06	630	1.8	300	2.28	1010	2.32	1090	3.05	2690	5.3	8600
18,	3.6	4040	2.5	1000	3.45	3660	5.0	7760	2.31	1070	------	*4430	2.08	660	1.82	322	2.22	898	2.6	1650	3.7	4290	5.0	7760
19,	3.5	3790	2.8	1800	3.25	3170	4.5	6390	2.29	1030	------	*3650	2.05	615	1.83	333	2.22	898	3.45	3660	4.8	7200	4.6	6660
20,	3.4	3540	3.0	1500	3.0	2570	4.6	6660	2.24	936	------	*2880	2.06	630	1.84	344	2.18	826	3.5	3790	4.8	7200	4.5	6390
21,	3.35	3420	2.8	1200	3.05	2690	4.6	6660	2.21	879	2.8	2100	2.10	690	1.85	355	2.13	741	3.4	3540	4.2	5580	4.6	6660
22,	3.2	3050	2.6	1000	3.35	3420	4.8	7200	2.25	955	2.7	1870	2.09	675	1.82	322	2.12	724	3.35	3420	3.9	4800	4.6	6660
23,	3.0	2570	2.6	900	4.6	6660	5.0	7760	2.22	898	2.65	1760	2.02	570	1.85	355	2.11	707	4.4	6120	3.7	4290	6.3	11500
24,	3.0	2570	2.55	900	4.9	7480	4.5	6390	2.36	1160	2.6	1650	2.00	540	1.88	388	2.10	690	4.9	7480	3.6	4040	6.0	10600
25,	2.95	2450	2.5	900	4.0	5060	4.0	5060	2.38	1200	2.55	1540	2.04	600	1.86	366	2.11	707	4.9	7480	3.7	4290	5.0	7760
26,	2.85	2220	2.4	1000	4.0	5060	3.7	4290	2.9	2330	2.46	1360	2.00	540	1.92	436	2.12	724	4.4	6120	3.6	4040	5.0	7760
27,	2.85	2220	2.85	1800	9.0	19800	3.45	3660	2.6	1650	2.36	1160	1.98	514	1.86	366	2.12	724	3.6	4040	3.5	3790	5.0	7760
28,	7.4	14800	2.75	1600	14.3	38100	3.25	3170	2.42	1280	2.38	1200	2.08	660	1.88	388	2.08	660	3.4	3540	3.5	3790	4.7	6930
29,	6.85	13100	------	------	11.7	28800	3.1	2810	2.34	1130	2.4	1240	1.96	488	1.97	501	2.10	690	3.05	2690	3.8	4540	4.0	5060
30,	5.5	9160	------	------	8.6	18500	3.02	2620	2.28	1010	2.37	1180	1.94	462	2.08	660	2.20	860	3.0	2570	3.6	4040	3.8	4540
31,	3.8	4540	------	------	7.0	13600	------	------	2.18	826	------	------	1.91	423	2.09	675	------	------	2.9	2330	------	------	3.8	4540

*Interpolated.

Note:—Relation of gage height to discharge affected by backwater from anchor ice about February 3 to March 10. There was also doubtless some backwater effect during the remainder of January, February and March. Gage heights to water surface.

Daily discharge determined from a fairly well defined discharge rating curve. Daily discharge February 3 to March 10, estimated from climatological records and the discharge from adjacent drainages. Discharge June 17 to 20 interpolated.

ESTIMATED MONTHLY DISCHARGE OF NORTH BRANCH SUSQUEHANNA RIVER, AT BINGHAMTON, N. Y.

(Drainage Area 2400 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1901.					
August,	6845	399	1475	0.61	0.70
September,	1510	652	988	.41	.46
October,	1625	652	1034	.43	.50
November,	4055	567	1454	.61	.68
December,	43210	1444	7514	3.13	3.61
1902.					
January,	8730	1070	3177	1.32	1.52
February,	9650	1004	2058	.86	.89
March,	60300	6705	19701	8.21	9.48
April,	10440	1855	5285	2.20	2.45
May,	2665	1070	1672	.70	.81
June,	14600	1334	2373	.99	1.10
July,	29960	2154	9587	4.00	4.61
August,	11240	1114	2941	1.23	1.42
September,	8280	630	1420	.59	.66
October,	19000	1740	4197	1.75	2.02
November,	7125	1740	2734	1.14	1.27
December,	27260	2246	7461	3.11	3.59
The year,	60300	630	5217	2.18	29 82
1903.					
January,	25820	3755	9360	3.90	4.50
February,	23660	2905	9248	3.85	4.01
March,	35580	6845	17275	7.19	8.29
April,	13480	1510	5344	2.23	2.49
May,	1466	420	821	.34	.39
June,	9340	252	2680	1.12	1.25
July,	7265	850	1914	.80	.92
August,	27260	1290	4413	1.84	2.12
September,	13160	894	2654	1.11	1.24
October,	48900	894	10108	4.21	4.85
November,	14280	1901	3890	1.62	1.81
December,	9495	1400	3556	1.48	1.71
The year,	48900	252	5930	2.47	33.58
1904.					
January,	18895	2361	5794	2.41	2.78
February,	32012	3385	10530	4.39	4.73
March,	47110	3730	14010	5.84	6.73
April,	21500	4930	10650	4.44	4.95
May	8430	1532	3088	1.29	1.49
June,	6165	718	1769	.737	.822
July,	3313	567	1027	.428	.493
August,	6985	1136	2396	.998	1.151
September,	4305	1070	1850	.770	.859
October,	16250	1625	5016	2.09	2.41
November,	4805	2200	2881	1.20	1.34
December,	23660	1625	4226	1.76	2.03
The year,	47110	567	5270	2.20	29.78

ESTIMATED MONTHLY DISCHARGE OF NORTH BRANCH SUSQUEHANNA RIVER, AT BINGHAMTON, N. Y.

(Drainage Area 2400 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a 1905.					
January (1-25),	15260	2361	6074	2.530	2.360
March,	42430	------	------	------	------
April,	21790	2785	8847	3.690	4.120
May,	2977	1356	2219	.925	1.070
June,	16320	1180	3635	1.510	1.680
July,	3805	850	1607	.670	.772
August,	5900	1224	2326	.969	1.120
September,	27260	2154	7145	2.980	3.320
October,	10020	1466	3166	1.320	1.520
November,	14700	1334	2740	1.140	1.270
December,	28880	2292	6868	2.860	3.300
b 1906.					
January,	23700	2360	5720	2.38	2.74
February,	10800	1510	3740	1.56	1.62
March,	24000	1600	6790	2.83	3.26
April,	23800	2880	11500	4.79	5.34
May,	16900	1620	4500	1.90	2.19
June,	7840	1720	4070	1.70	1.90
July,	4660	850	1710	.712	.82
August,	3380	420	1220	.508	.59
September,	1180	210	705	.294	.33
October,	6160	567	1580	.658	.76
November,	11700	1180	3470	1.45	1.62
December,	11800	1810	4380	1.82	2.10
The year,	24000	210	4120	1.72	23.27
c 1907.					
January,	24000	2570	8740	3.640	4.20
February,	4320	1150	1840	.769	.80
March,	21300	810	7840	3.270	3.77
April,	17800	2940	6210	2.590	2.89
May,	11200	1730	4530	1.890	2.18
June,	2820	700	1360	.567	.63
July,	2210	700	1440	.600	.69
August,	1040	115	523	.218	.25
September,	9500	272	2180	.908	1.01
October,	14300	1850	5230	2.180	2.51
November,	24400	2700	7080	2.950	3.29
December,	34300	1730	10500	4.380	5.05
The year,	34300	115	4790	2.000	27.27

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a Ice conditions January 26 to March 18, approximately: no estimates made.

b Values for January, February, March and December are probably slightly in excess of the true values, owing to anchor ice. Values for January to March and September and December are good. Values for April to August and October and November are excellent.

c Discharge during February has been corrected, 10 per cent. account of probable backwater effect from ice. Portions of January, March and December were also probably more or less affected. The mean for the month, however, is probably not affected more than a few per cent. from this cause and hence no correction has been attempted. Discharge March 31, interpolated.

ESTIMATED MONTHLY DISCHARGE OF NORTH BRANCH SUSQUEHANNA RIVER, AT BINGHAMTON, N. Y.

(Drainage Area 2400 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
d 1908.					
January,	10800	1730	3990	1.660	1.91
February,	38400	----------	6830	2.850	3.07
March,	32800	2940	13500	5.620	6.48
April,	16100	4440	8480	3.530	3.94
May,	18500	2210	7510	3.130	3.61
June,	3200	810	1450	.604	.67
July,	2450	500	820	.342	.39
August,	700	162	374	.156	.18
September,	500	45	243	.101	.11
October,	1260	162	505	.210	.24
November,	1260	600	909	.379	.42
December,	----------	----------	500	.208	.24
The year,	38400	45	3760	1.570	21.26
1909.					
January,	27300	810	5970	2.490	2.87
February,	33600	2450	12300	5.120	5.33
March,	17600	2700	7480	3.120	3.60
April,	24000	4320	9670	4.030	4.50
May,	20600	2090	7700	3.210	3.70
June,	5470	1580	2700	1.120	1.25
July,	1380	600	928	.387	.45
August,	1850	418	838	.349	.40
September,	700	335	476	.198	.22
October,	920	335	480	200	.23
November,	810	335	607	.253	.28
December,	1850	500	863	.360	.42
The year,	33600	335	4170	1.740	23.25
e 1910.					
January,	21900	----------	3760	1.57	1.81
February,	24200	----------	2490	1.04	1.08
March,	54100	5080	16700	6.96	8.02
April,	5860	2090	3520	1.47	1.64
May,	13000	1610	3960	1.65	1.90
June,	8000	1850	4240	1.77	1.98
July,	1610	418	810	0.338	0.39
August,	500	210	331	0.138	0.16
September,	1150	210	502	0.209	0.23
October,	920	162	533	0.222	0.26
November,	3070	500	1540	0.642	0.72
December,	----------	----------	899	0.375	0.43
The year,	54100	162	3360	1.40	18.62
1911.					
January,	18500	2220	6920	2.88	3.32
February,	3790	800	1440	0.600	0.62
March,	38100	800	6290	2.62	3.02
April,	28400	2620	9670	4.03	4.50
May,	4040	826	1640	0.683	0.79
June,	11200	843	2710	1.13	1.26
July,	1130	423	689	0.287	0.33
August,	675	300	406	0.169	0.19
September,	2810	540	998	0.416	0.46
October,	7480	936	2670	1.11	1.28
November,	7200	1980	3580	1.49	1.66
December,	11500	1400	5070	2.11	2.43
The year,	38100	300	3520	1.47	19.86

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d Discharge during frozen periods estimated on the basis of the discharge of adjacent areas, it is only roughly approximate. Discharge February 1 to 14, 1600 sec.-ft.

e Discharge for periods during which ice was present estimated by means of climatologic records and the records of discharge at Wilkes-Barre. Mean discharge January 1 to 21 estimated 600 sec.-ft.; no great variation in discharge. Mean discharge February 10 to 27, estimated 1,200 sec.-ft., ranging from about 800 to about 3,000 sec.-ft. Mean discharge December 8 to 31, estimated 700 sec.-ft.; no great variation in discharge.

CHEMUNG RIVER.

DESCRIPTION OF BASIN.

The Chemung River is formed near Painted Post, in the southeastern part of Steuben County, N. Y., by the confluence of Cohocton and Tioga Rivers. Cohocton River, the north branch, drains the opposite or southern slope of the divide at the head of Keuka and Canandaigua Lakes. Its drainage area lies wholly in the State of New York, principally in Steuben County and comprises approximately 630 square miles above the mouth. Tioga River rises in Tioga County, Penna., and flows northward, crossing the state line near Lawrenceville, Penna. The last fifteen miles of its course lie in New York State. It has about 1330 square miles of drainage area above its mouth, 689 of which lie in Pennsylvania. About five miles from its mouth the Tioga River receives, from the left Canisteo River, which rises in the northeast corner of Allegany County, N. Y., and flows in a southeasterly direction, draining, with its tributaries, the southern part of Steuben County. Its drainage area comprises about 540 square miles.

The Chemung River flows southeastward through Corning, Elmira and Chemung, crosses the state line and flows for approximately two and one-half miles in Pennsylvania, returns to New York for approximately two and one-half miles, and crosses again to Pennsylvania near Waverly, emptying into the Susquehanna River near Athens, Bradford County, Penna. The total length of the river proper is about 40 miles, of which 30 miles lie in New York; the drainage area at the mouth being approximately 2520 square miles, 832 of which are in Pennsylvania.

The Chemung River is sluggish throughout its course, flowing over a wide gravelly bed, in a series of rifts and pools, and one or the other of the banks is usually low and subject to frequent overflow. The hills bordering the river rise to a height of several hundred feet on either side, within a short distance of the stream. The upland plateau is, to a large extent, wooded, has impervious soil, no lake storage, and few marsh areas. Tributaries are ramifying and uniformly distributed, though not very numerous, and dry gullies, or flood channels, are common. The principal tributaries from Pennsylvania are Seely Creek, South Creek and Bently Creek, all of which join the river in New York State.

In its watershed in Pennsylvania lie the boroughs of Athens, Sayre and South Waverly, while in New York are Corning, Elmira, Chemung and Waverly.

The mean annual precipitation over this watershed is from 35 to 40 inches.

The discharge of this stream has been measured since September 7th, 1903, at Chemung, approximately ten miles above its mouth.

SUSQUEHANNA BASIN—STATION NO. 3.

CHEMUNG RIVER AT CHEMUNG, N. Y.

DESCRIPTION OF STATION.

This station, established September 7th, 1903, by the United States Geological Survey, and maintained through co-operation with the New York State Engineer, was located at the suspension, highway bridge, midway between Chemung, N. Y., and Willawanna, Penn'a., near the state line, until April 19th, 1911, when this structure was removed and the gage temporarily placed 250 feet upstream.

The channel is straight for 700 feet above and 800 feet below the station. The right bank is high, cleared, and not subject to overflow; the left bank is medium height, wooded and overflows at high water. The bed of the stream is composed of gravel and is permanent. The current is good. There is but one channel at all stages.

Discharge measurements were made from the downstream side of the bridge, which had a single span of 395 feet. The initial point for soundings was the face of the right abutment on the downstream side.

A standard chain gage was attached to the upstream side of the bridge, near the right bank, and was read twice daily. The bench mark is formed by three nails driven into a telegraph pole 70 feet to the right of the initial point for soundings and about thirty feet upstream. The pole is marked with black paint "U. S. G. S. B. M." Elevation of bench mark above gage datum is 29.88 feet.

The smooth water reaches of the stream become ice covered in winter. Needle ice forms over the rapids and is carried under the surface ice. Much of the winter flow apparently filters through these beds of needle ice at times. The conditions render the estimation of the daily discharge in winter impracticable.

The data published for this station is based upon five rating curves, each one having been modified, as additional meter measurements were obtained.

Since the establishment of this station thirty-two discharge measurements have been made.

The following data have been furnished by United States Geological Survey:

DISCHARGE MEASUREMENTS OF CHEMUNG RIVER, AT CHEMUNG, N. Y.

(Drainage Area 2440 Square Miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1903.							
1.	Aug. 27,	Covert,	------	--------	------	2.89	809	
2.	Sept. 7,	Horton,	------	--------	------	3.29	1,354	
3.	Oct. 2,	Halsey,	------	--------	------	2.47	611	
4.	Oct. 12,	Covert,	------	--------	------	6.72	8,766	
	1904.							
5.	Mar. 11,	Covert,	------	--------	------	5.75	6,170	
6.	April 9,	Horton,	------	--------	------	5.64	5,717	
7.	July 15,	Covert,	------	--------	------	3.05	1,042	
8.	Sept. 9,	do	------	--------	------	1.90	220	
	1905.							
9.	Mar. 21,	Brundage,	391	3,381	4.87	9.46	16,480	
10.	Mar. 22,	do	389	3,412	4.87	9.49	16,630	
11.	Mar. 22,	do	389	3,094	4.48	8.84	13,860	
12.	Mar. 26,	Freeman,	393	4,462	6.58	12.10	29,340	
13.	Mar. 26,	do	393	4,194	6.16	11.39	25,860	
14.	May 18,	Beebe,	220	1,040	.69	2.64	714	
15.	July 20,	Murphy & Covert,	216	1,060	.75	2.62	748	
16.	Aug. 23,	Covert & Weeks,	197	904	.49	2.28	435	
	1906.							
17.	Feb. 17,	Covert & Weeks,	225	1,040	.65	2.85	674	Ice conditions; gage height to bottom of ice, 2.42′; average thickness of ice, .53; considerable needle ice.
18.	Mar. 30,	Horton & Mott,	393	2,560	3.85	7.20	9,850	
19.	Mar. 31,	Horton,	395	4,340	6.34	11.73	27,500	
20.	Mar. 31,	do	394	4,120	6.21	11.40	25,600	
21.	July 27,	Covert,	200	935	.44	2.29	416	
22.	Sept. 15,	do	186	860	.25	1.89	216	
23.	Oct. 4,	do	203	879	.43	2.03	381	
	1907.							
24.	June 19,	Wood & Hoyt,	215	974	.64	2.53	627	
	1908.							
25.	Sept. 6,	Adams,	183	845	0.16	1.81	139	
26.	Sept. 29,	do	185	867	0.12	1.68	101	

DISCHARGE MEASUREMENTS OF CHEMUNG RIVER, AT CHEMUNG, N. Y.

(Drainage Area 2440 Square Miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1909.							
27.	April 23,	Covert,	305	1,600	2.05	4.60	3,290	
28.	Aug. 19,	do	205	234	0.67	1.82	156	
29.	Dec. 21,	do	220	1,110	0.21	2.82	232	Complete ice cover, average thickness of ice, 0.40 foot. Gage height to top of ice 2.88 ft.
	1910.							
30.	July 25,	Hoyt,	204	243	0.96	1.99	233	
	1911.							
31.	April 20,	DeGolyer,	241	1,860	2.35	19.22	4,370	Gage moved on account of bridge being torn down. Gage height referred to old datum—5.25.
32.	Oct. 5,	do	358	739	1.83	17.44	1,350	Measurement made by wading about one-fourth mile below bridge. Gage height referred to old datum—3.47.

DISCHARGE TABLE FOR CHEMUNG RIVER, AT CHEMUNG, N. Y., FROM 1903, TO DECEMBER 31, 1904.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.70	146	.50	1540	.30	4940	.10	9850	.90	15160
.80	170	.60	1670	.40	5190	.20	10140	9.00	15460
.90	220	.70	1805	.50	5445	.30	10430	.10	15760
2.00	273	.80	1945	.60	5700	.40	10720	.20	16060
.10	328	.90	2095	.70	5960	.50	11010	.30	16360
.20	385	4.00	2255	.80	6220	.60	11300	.40	16660
.30	445	.10	2420	.90	6485	.70	11590	.50	16960
.40	510	.20	2590	6.00	6750	.80	11880	.60	17260
.50	575	.30	2765	.10	7020	.90	12170	.70	17560
.60	645	.40	2950	.20	7295	8.00	12460	.80	17860
.70	720	.50	3140	.30	7575	.10	12760	.90	18160
.80	800	.60	3340	.40	7855	.20	13060	10.00	18460
.90	890	.70	3550	.50	8135	.30	13360	11.00	22146
3.00	985	.80	3765	.60	8415	.40	13660	12.00	24460
.10	1085	.90	3990	.70	8700	.50	13960	13.00	27460
.20	1190	5.00	4220	.80	8985	.60	14260	14.00	30460
.30	1300	.10	4455	.90	9270	.70	14560	15.00	33460
.40	1415	.20	4695	7.00	9560	.80	14860	16.00	36460

Note:—The above table is applicable only for open channel conditions. It is based upon 8 discharge measurements made during 1903 and 1904. It is fairly well defined between gage heights 1.90 and 3.30 feet. The table has been extended above gage height 6.70 feet. Above gage height 8.0 feet the rating curve is a tangent, the difference being 300 per tenth. The rating table has been applied to the nearest hundredth of a foot to gage height 6.00, to the nearest half-tenth of a foot to gage height 9.00, to the nearest tenth of a foot above gage height 9.00 feet.

DISCHARGE TABLE FOR CHEMUNG RIVER, AT CHEMUNG, N. Y., FROM 1905 TO 1907.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.50	85	.70	740	.90	2160	5.00	4240	.20	9790
.60	115	.80	825	4.00	2320	.20	4680	.40	10390
.70	145	.90	915	.10	2480	.40	5130	.60	11010
.80	180	3.00	1010	.20	2650	.60	5590	.80	11650
.90	220	.10	1110	.30	2830	.80	6060	8.00	12300
2.00	270	.20	1220	.40	3010	6.00	6550	9.00	15800
.10	325	.30	1335	.50	3200	.20	7070	10.00	19700
.20	385	.40	1455	.60	3400	.40	7590	11.00	24000
.30	450	.50	1580	.70	3610	.60	8130	12.00	28700
.40	515	.60	1710	.80	3820	.80	8670	13.00	33500
.50	585	.70	1850	.90	4030	7.00	9220	14.00	39300
.60	660	.80	2000						

Note:—The above table is applicable only for open channel conditions. It is based on discharge measurements made during 1903-1907. It is well defined above gage height 1.9 feet.

DISCHARGE TABLE FOR CHEMUNG RIVER, AT CHEMUNG, N. Y., FOR 1908.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.60	75	2.00	225	.40	475	.80	805	.20	1215
.70	105	.10	280	.50	550	.90	900	.30	1330
.80	140	.20	340	.60	630	3.00	1000	.40	1455
.90	180	.30	405	.70	715	.10	1105		

Note:—This table is not applicable for ice or obstructed channel conditions. It is based on discharge measurements made during 1903-1908 and is well defined. Above gage height 3.4 feet the table is the same as that for 1905-1907.

DISCHARGE TABLE FOR CHEMUNG RIVER, AT CHEMUNG, N. Y., FROM 1909 TO 1910.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.50	50	.70	1780	.90	6290	.10	12630	.30	20950
.60	75	.80	1925	6.00	6550	.20	12970	.40	21370
.70	105	.90	2075	.10	6810	.30	13310	.50	21800
.80	140	4.00	2230	.20	7070	.40	13650	.60	22230
.90	180	.10	2390	.30	7330	.50	14000	.70	22670
2.00	225	.20	2560	.40	7590	.60	14350	.80	23110
.10	280	.30	2730	.50	7860	.70	14710	.90	23550
.20	340	.40	2910	.60	8130	.80	15070	11.00	24000
.30	405	.50	3100	.70	8400	.90	15430	.10	24450
.40	470	.60	3290	.80	8670	9.00	15800	.20	24910
.50	540	.70	3490	.90	8940	.10	16170	.30	25370
.60	610	.80	3690	7.00	9220	.20	16550	.40	25830
.70	685	.90	3900	.10	9500	.30	16930	.50	26300
.80	765	5.00	4120	.20	9790	.40	17310	.60	26780
.90	850	.10	4340	.30	10090	.50	17700	.70	27260
3.00	945	.20	4570	.40	10390	.60	18090	.80	27740
.10	1045	.30	4800	.50	10700	.70	18490	.90	28220
.20	1150	.40	5040	.60	11010	.80	18890	12.00	28700
.30	1265	.50	5280	.70	11330	.90	19290	13.00	33500
.40	1385	.60	5530	.80	11650	10.00	19700	14.00	39300
.50	1510	.70	5780	.90	11970	.10	20110	15.00	44300
.60	1640	.80	6030	8.00	12300	.20	20530	16.00	49300

Note:—The above table is not applicable for ice or obstructed channel conditions. It is based on discharge measurements made during 1903-1910 and is well defined.

DISCHARGE TABLE FOR CHEMUNG RIVER, AT CHEMUNG, N. Y., FROM JANUARY 13, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.40	39	4.00	2020	.60	7570	.10	15600	.60	26000
.50	53	.10	2160	.70	7840	.20	16000	.70	26500
.60	75	.20	2310	.80	8120	.30	16400	.80	27000
.70	105	.30	2470	.90	8410	.40	16800	.90	27500
.80	140	.40	2630	7.00	8700	.50	17200	12.00	28000
.90	180	.50	2800	.10	9000	.60	17600	.10	28500
2.00	220	.60	2980	.20	9300	.70	18000	.20	29000
.10	270	.70	3170	.30	9600	.80	18400	.30	29500
.20	320	.80	3360	.40	9900	.90	18800	.40	30000
.30	370	.90	3560	.50	10200	10.00	19200	.50	30500
.40	430	5.00	3760	.60	10500	.10	19600	.60	31000
.50	490	.10	3960	.70	10800	.20	20000	.70	31500
.60	550	.20	4180	.80	11100	.30	20400	.80	32000
.70	620	.30	4400	.90	11400	.40	20800	.90	32500
.80	690	.40	4620	8.00	11800	.50	21200	13.00	33000
.90	770	.50	4840	.10	12100	.60	21600	.10	33500
3.00	860	.60	5060	.20	12500	.70	22000	.20	34000
.10	960	.70	5300	.30	12800	.80	22400	.30	34500
.20	1060	.80	5550	.40	13200	.90	22900	.40	35000
.30	1160	.90	5800	.50	13500	11.00	23400	.50	35500
.40	1270	6.00	6050	.60	13800	.10	23800	.60	36000
.50	1380	.10	6300	.70	14200	.20	24200	.70	36500
.60	1500	.20	6550	.80	14500	.30	24600	.80	37000
.70	1620	.30	6800	.90	14900	.40	25000	.90	37500
.80	1750	.40	7050	9.00	15200	.50	25500	14.00	38000
.90	1880	.50	7300						

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEMUNG RIVER AT CHEMUNG, N. Y.

1903. Day.	SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	2.24	409	2.98	966	2.90	890
2,	------	------	2.40	510	2.88	872	2.88	872
3,	------	------	2.52	589	3.88	2065	2.88	872
4,	------	------	2.57	624	2.83	827	2.88	872
5,	------	------	2.74	752	2.86	854	2.82	818
6,	------	------	3.30	1300	2.90	890	2.59	638
7,	3.29	1289	3.37	1380	3.08	1065	3.69	1791
8,	2.24	409	4.62	3382	2.98	966	2.79	792
9,	3.19	1180	9.97	18460	4.93	4059	2.69	712
10,	3.16	1148	7.78	11880	2.90	890	2.64	675
11,	4.84	3855	8.80	14860	2.88	872	2.49	568
12,	4.56	3260	6.74	8840	2.86	854	2.49	569
13,	3.84	2005	6.12	7020	2.80	800	2.69	712
14,	3.46	1490	4.97	4157	2.73	748	2.69	712
15,	3.22	1212	4.47	3083	2.68	705	2.69	712
16,	3.06	1045	4.20	2590	2.76	768	2.74	752
17,	2.96	947	3.92	2127	7.06	9705	2.74	752
18,	3.44	1465	7.04	9705	8.13	12910	2.64	675
19,	3.46	1490	6.24	7435	5.88	6432	2.64	675
20,	3.29	1289	4.90	3990	4.88	3945	2.64	675
21,	2.99	975	4.42	2988	4.26	2695	2.69	712
22,	2.84	836	4.12	2454	3.98	2223	2.74	752
23,	2.54	603	3.87	2050	3.88	2065	2.79	792
24,	2.34	471	4.72	3593	3.83	1990	2.79	792
25,	2.34	471	3.54	1592	3.78	1917	2.79	792
26,	2.29	439	3.44	1465	3.38	1392	2.74	752
27,	2.24	409	3.32	1323	3.23	1223	2.69	712
28,	2.24	409	3.30	1300	3.10	1085	2.54	603
29,	2.22	397	3.24	1234	3.10	1085	2.44	536
30,	2.26	421	3.22	1212	3.10	1085	2.54	603
31,	------	------	3.13	1116	------	------	2.64	675

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEMUNG RIVER, AT CHEMUNG, N. Y.

1904. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.00		a3.85		3.57		6.50	8135	7.20	10140	7.05	9705	2.60	645	2.50	575	2.00	273	2.35	478	2.40	510	2.05	300
2,	2.95		3.50		3.37		9.00	15460	6.25	7435	5.85	35860	2.88	872	2.42	523	2.02	284	2.42	523	2.30	445	2.00	273
3,	2.90		3.45		3.67		7.05	9705	5.45	5318	5.35	5065	2.70	720	2.98	966	2.00	273	2.22	397	2.22	397	1.90	220
4,	2.90		3.35		8.57		5.75	6090	5.02	4267	4.85	3877	2.62	660	2.82	818	1.95	246	2.10	328	2.20	385	1.90	220
5,	2.90		4.00		5.72		5.38	5140	4.62	3382	7.70	11590	2.60	645	2.70	720	2.00	273	2.15	356	2.25	415	1.90	220
6,	2.90		4.20		4.72		5.15	4575	4.40	2950	5.95	6617	2.58	631	2.60	645	1.98	262	2.18	374	2.20	385	1.90	220
7,	2.85		5.90		7.69		5.20	4695	4.18	2556	5.10	4455	2.95	938	2.45	542	1.92	231	1.88	210	2.20	385	1.85	195
8,	2.90		a1670		b15.97	36460	5.25	4817	4.00	2255	4.62	3382	2.85	845	2.35	477	1.95	246	1.95	246	2.22	397	1.65	100
9,	3.00		8.70		9.68	17560	5.75	6090	3.80	1945	5.35	5065	2.72	736	2.20	385	1.90	220	1.90	220	2.12	339	2.25	415
10,	3.00		6.85		6.48	8135	9.55	17260	3.70	1805	6.15	7158	2.75	760	2.15	356	1.90	220	1.95	246	2.18	374	2.10	328
11,	3.00		5.85		5.02	4267	7.40	10720	3.58	1644	4.90	3990	3.90	2095	2.20	385	1.95	246	1.95	246	2.20	385	2.10	328
12,	3.00		5.40		4.90	3990	6.55	8275	3.40	1415	4.42	2988	3.68	1778	2.18	374	1.95	246	2.10	328	2.20	385	2.10	328
13,	3.00		4.75		4.50	3140	5.75	6090	3.38	1392	4.00	2255	3.45	1477	2.10	328	1.95	246	2.62	660	2.12	339	2.00	273
14,	3.00		4.22		4.30	2765	5.15	4575	3.30	1300	3.70	1805	3.45	1477	2.08	317	1.90	220	3.65	1732	2.08	317	2.00	273
15,	3.00		3.95		4.05	2337	4.80	3765	5.15	4575	3.48	1515	3.02	1005	2.00	273	1.90	220	3.15	1138	2.05	300	2.00	273
16,	c3.15		3.65		3.88	2065	4.80	3765	6.75	8842	4.05	2337	2.82	818	2.00	273	1.90	220	2.82	818	2.25	415	2.00	273
17,	3.20		d4.85		3.62	1697	4.80	3765	5.65	5830	3.80	1945	2.70	720	2.00	273	1.90	220	2.70	720	2.15	356	1.90	220
18,	3.20		4.55		3.78	1917	5.10	4455	5.00	4220	3.42	1440	2.62	660	1.95	246	1.90	220	2.60	645	2.20	385	1.90	220
19,	3.20		e4.30		3.92	2127	5.10	4455	9.45	16660	3.22	1212	2.50	575	1.95	246	1.90	220	2.50	575	2.05	300	1.95	246
20,	3.20		4.15		5.98	6697	4.85	3877	8.40	13660	3.12	1106	2.40	510	2.05	300	1.88	210	2.45	542	2.00	273	2.00	273
21,	3.35		4.00		6.78	8985	4.42	2988	6.60	8415	3.02	1005	2.30	445	2.05	300	1.80	170	2.52	589	2.00	273	2.10	328
22,	3.50		f4.12		5.20	4695	4.55	3240	5.40	5190	3.10	1085	2.35	477	2.30	445	1.75	146	3.40	1415	2.00	273	2.05	300
23,	g11.35		4.05		h10.90	21160	4.60	3340	4.95	4105	3.05	1035	2.25	415	2.75	760	1.80	170	3.40	1415	2.00	273	2.18	374
24,	a9.55		4.32		11.40	22660	4.50	3140	5.35	5065	3.05	1035	2.72	736	2.88	872	1.82	180	3.18	1169	2.02	284	2.10	328
25,	6.65		4.12		10.25	19060	4.55	3240	5.25	4817	2.88	872	2.78	784	2.70	720	2.00	273	3.05	1035	2.20	385	2.10	328
26,	5.30		4.05		h13.20	28060	4.82	3810	4.75	3658	2.80	800	2.55	610	2.45	542	2.15	356	2.85	845	2.15	356	2.15	356
27,	4.90		3.90		11.05	21460	4.65	3445	4.82	3810	2.70	720	2.60	645	2.30	445	2.38	497	2.75	760	2.00	273	2.60	645
28,	4.20		3.37		7.28	10430	9.10	15760	5.40	5190	2.65	683	2.50	575	2.12	339	2.35	477	2.65	682	1.95	246	6.40	7855
29,	4.22		3.57		5.95	6617	8.50	13960	4.25	2678	2.60	645	2.70	720	2.10	328	2.35	477	2.60	645	2.10	328	5.15	4575
30,	4.25				5.60	5700	7.42	10720	4.00	2255	2.60	645	2.80	800	2.08	317	2.35	477	2.45	542	1.95	246	3.90	2095
31,	4.05				5.70	5960			5.85	6352			2.62	660	2.00	273			2.30	445			3.80	1945

a No. ice.
b Water over flats highest point 17 feet.
c River freezing over below gage.
d River frozen over.
e Thickness of ice 5 inches.
f Thickness of ice 12 inches.
g Ice running.
h River over the flats.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEMUNG RIVER, AT CHEMUNG, N. Y.

1905.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	D's.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.64	1770	2.93	Estimated mean daily discharge for month—900.	3.0	2500	5.95	6420	3.38	1430	2.3	450	3.05	1060	3.1	1110	1.9	220	1.86	204	2.26	425	3.58	1660
2,	3.56	1660	2.93		3.05	2500	5.2	4680	3.2	1220	2.05	298	3.45	1520	2.95	960	2.04	290	1.85	200	2.34	475	2.88	900
3,	3.14	1150	2.88		3.0	2500	4.75	3720	3.2	1220	2.25	420	5.02	4280	2.75	780	2.08	315	1.96	250	2.55	620	4.95	4130
4,	2.79	815	2.83		2.95	2500	4.5	3200	3.05	1060	2 3	450	3.8	2000	2.5	585	2.08	315	2.02	280	2.46	555	6.16	6970
5,	2.54	615	2.75		3.02	2500	4.55	3300	2.8	825	2.15	355	3.35	1400	2.5	585	2.04	290	2.2	385	2.44	545	4.86	3950
6,	3.04	1050	2.65		3.1	2500	4.78	3780	2.8	825	2.3	450	3.15	1160	2.38	500	2.04	290	2.03	285	2.5	585	4.32	2870
7,	4.09	2460	2.63		3.08	2500	5.0	4240	2.82	845	2.35	480	2.95	960	2.32	46	2.02	280	1.88	210	2.46	555	4.02	2350
8,	5.74	5920	2.63		3.25	2500	4.7	3610	2.95	960	3.3	1335	2.82	845	2.3	450	1.96	250	1.86	204	2.83	850	3.94	2220
9,	4.59	3380	2.63		3.45	2500	4.45	3100	2.82	845	3.18	1200	2.9	915	2.25	420	1.96	250	1.87	208	2.76	790	4.09	2465
10,	4.09	2460	2.72		3.85	2500	4.22	2690	2.68	725	2.95	960	3.0	1010	2.3	450	1.9	220	1.86	204	2.76	790	4.21	2670
11,	3.76	1940	2.72		3.9	2500	4.7	3610	2.6	660	2.8	825	2.95	960	2.22	400	1.9	220	1.84	196	2.68	725	4.02	2350
12,	3.49	1570	2.72		3.88	2500	5.22	4720	2.58	645	2.85	870	2.65	700	2.65	700	2.24	410	2.9	915	2.3	660	3.67	1810
13,	3.34	1380	2.72		3.9	2500	4.78	3780	2.7	740	3.0	1010	2.72	755	4.05	2400	2.58	645	3.0	1010	2.5	585	3.48	1550
14,	3.39	1440	2.72		3.9	2500	4.22	2690	2.68	725	2.9	915	2.75	780	3.1	1110	2.72	755	2.71	750	2.42	530	3.33	1370
15,	4.44	3090	2.87		3.8	2500	4.2	2650	2.7	740	2.9	915	2.92	935	2.88	900	2.6	660	2.5	585	2.43	535	2.97	980
16,	5.04	1700	2.91		3.82	2500	4.5	3200	2.75	780	2.75	780	2.92	935	2.75	780	2.57	635	2.42	530	2.4	515	2.56	630
17,	5.69	1700	2.95		4.1	2500	4.35	2920	2.7	740	2.7	740	2.8	825	2.85	870	2.56	630	2.36	490	2.38	500	2.66	710
18,	5.09	1700	2.9		7.3	2500	4.2	2650	2.65	700	3.45	1520	2.65	700	2.82	845	2.7	740	2.16	360	2.32	465	2.76	790
19,	4.64	1700	2.88		13.6	36900	4.12	2510	2.6	660	7.1	9500	2.9	915	2.65	700	2.51	590	2.19	380	2.34	475	2.72	755
20,	3.58	1700	2.8		14.1	39800	3.98	2290	2.6	660	6.05	6680	2.55	620	2.58	645	2.58	645	2.54	615	2.24	410	2.68	725
21,	3.23	1700	2.8		9.48	17600	4.08	2450	2.58	645	5.05	4350	2.4	515	2.4	515	2.38	500	2.87	890	2.18	375	3.26	1290
22,	2.98	1700	2.95		9.3	16900	5.95	6420	2.5	585	10.55	22000	2.2	385	2.4	515	2.26	425	2.9	915	2.1	325	7.05	9360
23,	2.68	1700	3.0		9.6	18100	5.1	4460	2.5	585	7.88	11900	2.12	337	2.33	470	2.19	380	2.77	800	2.14	350	6.32	7380
24,	2.63	1700	3.0		11.6	26800	4.52	3240	2.35	480	5.9	6300	3.2	1220	2.16	360	2.08	315	2.62	675	2.22	400	5.74	5920
25,	2.73	1700	3.0		13.2	34600	4.2	2650	2.4	515	5.08	4420	2.9	915	2.08	315	2.04	290	2.58	645	2.17	365	4.54	3280
26,	2.48	1700	3.0		11.9	28200	4.0	2320	2.35	480	4.4	3010	2.8	825	2.02	280	2.0	270	2.5	585	2.08	315	4.13	2540
27,	2.83	1700	3.0		10.35	21400	3.85	2080	2.4	515	3.88	2130	2.65	700	1.94	240	1.86	204	2.49	580	2.1	325	3.84	2060
28,	2.93	1700	3.0		9.9	19300	3.7	1850	2.2	385	3.68	1820	2.4	515	1.91	225	1.9	220	2.44	545	2.08	315	3.58	1680
29,	3.08	1700	------		8.52	14100	3.55	1650	2.4	515	3.45	1520	2.42	530	1.97	255	1.92	230	2.32	465	2.61	670	4.18	2450
30,	2.93	1700	------		7.6	11000	3.5	1580	2.3	450	3.25	1280	3.45	1520	1.94	240	1.86	204	2.32	465	4.02	2350	6.68	8350
31,	2.93	1700	------		6.6	8130	------	------	2.25	420	------	------	3.45	1520	1.9	220	------	------	2.24	410	------	------	4.74	3690

Note:—River frozen entirely across January 16 to March 18, approximately, except for open water at the rapids below the station. The gage heights are to the surface of the water in a hole cut in the ice. The following comparative readings were also made:

	Water Surface.	Top of ice.
January 28,	2.93 feet.	3.13 feet.
February 4,	2.83 feet.	3.13 feet.
February 11,	2.72 feet.	3.02 feet.
February 18,	2.9 feet.	3.0 feet.
February 26,	3.0 feet.	3.2 feet.
March 4,	2.95 feet.	3.05 feet.
March 11,	3.9 feet.	4.0 feet.

Discharge during ice periods estimated. See "Estimated Monthly Discharge' for 1905.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEMUNG RIVER, AT CHEMUNG, N. Y.

1906.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.27	2780	3.4	1455	2.52	600	7.42	10500	3.15	1160	4.44	3090	3.34	1380	2.28	437	2.19	379	1.55	100	3.46	1530	3.33	1370
2,	3.93	2210	3.16	------	2.56	630	6.54	7970	3.09	1100	4.15	2560	3.42	1480	2.24	410	2.04	290	1.73	155	3.31	1450	2.86	880
3,	3.54	1630	3.24	------	2.57	640	5.93	6370	3.28	1310	3.73	1900	5.2	4680	2.2	385	2.14	350	1.89	215	3.25	1280	2.87	890
4,	3.70	1850	3.36	------	8.6	14300	6.23	7150	3.99	2300	3.48	1550	4.15	2560	2.18	373	2.16	360	1.77	170	3.27	1300	2.6	660
5,	4.44	3090	3.24	------	5.2	4680	7.3	10100	3.75	1920	3.35	1400	3.57	1670	3.29	1325	2.08	315	1.95	245	3.2	1220	2.35	482
6,	4.0	2320	2.94	------	3.96	2260	7.92	12000	3.8	2000	5.25	4790	3.28	1310	3.05	1060	2.14	350	1.74	160	3.06	1070	3.32	1360
7,	3.52	1610	2.8	------	3.64	1770	6.8	8670	3.65	1780	5.06	4370	3.03	1040	2.96	970	2.12	335	1.8	180	2.89	905	6.26	7230
8,	2.97	980	2.84	------	3.4	1460	5.92	6350	3.35	1400	4.12	2510	2.85	870	3.68	1820	------	------	2.87	890	2.81	835	4.56	3320
9,	2.66	710	2.92	------	3.3	1330	5.68	5770	3.25	1280	3.74	1910	2.83	850	3.76	1940	------	------	2.58	645	2.77	800	3.56	1660
10,	2.74	775	2.84	------	3.14	1150	8.32	13400	3.63	1750	3.58	1680	2.74	775	3.28	1310	------	------	2.38	500	2.64	690	3.55	1645
11,	2.86	880	2.71	------	2.97	980	8.4	13600	3.55	1650	3.65	1780	2.68	725	3.85	2080	1.78	175	2.12	335	2.62	675	3.26	1290
12,	3.02	1030	2.88	------	2.9	915	7.14	9620	3.26	1290	3.47	1540	2.66	710	4.15	2560	1.81	185	2.31	455	2.66	710	3.72	1880
13,	2.92	935	2.66	------	2.85	870	6.33	7410	3.24	1270	3.15	1160	2.55	620	3.52	1610	1.96	250	2.36	490	2.74	775	3.28	1310
14,	2.86	880	2.64	------	2.74	775	5.82	6110	3.22	1240	2.84	860	2.45	550	3.1	1110	2.09	320	2.4	515	2.92	935	3.42	1480
15,	2.86	880	2.7	------	2.7	740	6.73	8480	3.2	1220	2.85	870	2.4	515	2.82	845	1.78	175	2.41	520	2.97	980	3.54	1630
16,	2.79	815	2.72	------	2.71	750	6.82	8720	3.2	1220	3.38	1430	2.33	470	2.58	645	1.62	120	2.36	490	2.96	970	5.48	5310
17,	2.6	660	2.8	------	2.6	660	5.92	6350	3.29	1320	6.53	7940	2.35	480	2.46	555	1.74	160	2.22	400	2.9	915	4.6	3400
18,	2.78	800	2.8	------	2.32	465	5.36	5040	4.94	4110	7.11	9530	2.44	545	2.39	510	1.62	120	2.17	365	3.04	1050	3.96	2260
19,	2.78	800	2.6	------	2.56	630	4.92	4070	4.54	3280	6.12	6860	2.6	660	2.32	465	1.56	105	2.14	350	6.13	6890	2.74	775
20,	2.79	815	2.62	------	2.2	385	4.56	3320	3.92	2350	6.13	6890	2.59	650	2.61	670	1.52	90	5.4	5130	5.84	6160	2.48	570
21,	2.78	800	2.79	------	2.38	500	4.24	2720	3.44	1500	4.92	4070	2.47	565	3.36	1410	1.54	95	5.32	4950	5.63	5660	3.37	1420
22,	4.54	3280	3.31	------	2.58	645	4.34	2900	3.28	1310	4.29	2810	2.51	580	3.1	1110	1.54	95	4.9	4030	5.6	5590	3.36	1410
23,	7.02	9280	3.35	------	2.44	545	4.25	2740	3.18	1200	3.9	2160	2.34	475	2.66	710	1.63	125	4.28	2790	4.88	3990	3.45	1520
24,	8.08	12600	2.94	------	2.58	645	3.7	1850	3.06	1070	3.81	2020	2.32	465	3.1	1110	1.84	195	3.8	2000	4.34	2900	4.97	4180
25,	5.77	5990	2.58	------	2.43	535	3.96	2260	3.25	1280	3.43	1490	2.3	450	3.04	1050	1.8	180	3.48	1555	3.78	1970	4.46	------
26,	4.56	3320	2.7	------	2.54	615	3.81	2020	3.14	1150	3.2	1220	2.28	437	2.68	725	1.72	150	3.36	1410	3.76	1940	3.94	------
27,	4.14	2550	2.86	------	3.88	2130	3.56	1660	6.72	8450	3.04	1050	2.28	437	2.67	715	1.74	160	3.28	1310	3.58	1680	4.36	------
28.	3.93	2210	2.54	------	11.94	28400	3.37	1420	8.68	14600	2.93	945	2.36	490	2.6	660	1.52	90	3.09	1100	3.36	1410	4.42	------
29.	3.64	1770	------	------	7.25	9940	3.29	1320	6.9	8940	3.5	1580	2.59	650	2.69	730	1.53	95	3.16	1180	3.26	1290	4.32	------
30,	3.51	1590	------	------	7.06	9390	3.21	1230	5.42	5180	3.48	1550	2.38	500	2.44	545	1.49	82	3.1	1110	3.16	1180	4.32	------
31.	3.33	1370	------	------	11.09	24400	------	------	4.72	3650	------	------	2.31	455	2.2	385	------	------	3.08	1090	------	------	5.82	------

Note:—Ice conditions as follows: Shore ice only in January: river frozen over February 2 and probably remained frozen until the latter part of the month; considerable anchor ice during the greater part of December; river frozen over December 25; ice went out December 31.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEMUNG RIVER, AT CHEMUNG, N. Y.

1907.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.72	8450	3.97	1600	------	400	4.50	3200	5.85	6180	2.84	860	2.12	340	1.98	260	1.58	109	2.92	930	2.93	940	3.03	1040
2,	6.12	6860	3.46	1600	------	400	4.14	2550	5.29	4880	2.84	860	4.25	2740	1.94	240	1.66	130	2.56	630	2.87	890	2.92	930
3,	5.20	4680	3.08	1600	------	400	3.84	2060	4.82	3860	4.78	3780	3.85	2080	1.96	250	1.66	130	2.35	480	5.56	5500	2.80	825
4,	6.02	6600	5.48	1600	------	400	3.78	1970	4.32	2870	4.00	2320	3.26	1290	1.88	210	1.72	150	2.32	460	5.11	4480	2.70	740
5,	7.43	10500	4.83	1600	------	400	3.60	1710	4.52	3240	3.60	1710	2.44	540	1.86	200	1.80	180	3.11	1120	4.26	2760	2.52	600
6,	5.56	5500	4.32	1600	------	400	3.54	1630	4.18	2620	4.11	2500	2.74	770	1.95	250	2.12	340	3.22	1240	3.91	2180	2.58	650
7,	5.31	4920	4.20	1600	------	400	3.38	1430	4.00	2320	4.02	2350	3.15	1170	1.88	210	1.90	220	2.86	880	6.58	8080	2.50	585
8,	7.36	10300	3.94	1600	------	400	3.34	1385	4.90	4030	3.58	1680	3.14	1150	1.91	230	1.84	200	2.60	660	6.96	9110	2.60	660
9,	8.71	14700	3.83	1600	------	400	3.25	1280	5.09	4440	3.30	1335	2.86	880	1.84	200	1.83	190	3.46	1530	5.58	5540	2.72	760
10,	6.30	7330	3.60	1600	------	400	3.42	1480	5.00	4240	3.10	1110	2.82	840	1.88	210	1.82	190	3.63	1750	4.98	4200	4.08	2450
11,	5.45	5250	3.49	1600	------	400	3.56	1660	4.42	3050	2.88	900	2.72	760	1.84	200	2.03	290	2.52	600	4.48	3160	7.18	9730
12,	4.94	4110	4.24	1600	------	400	3.98	2290	4.42	3050	2.90	915	3.48	1560	1.78	170	2.11	330	2.92	930	4.16	2580	5.82	6110
13,	4.69	3590	------	500	------	400	4.26	2760	4.15	2560	2.76	790	4.60	3400	1.78	170	2.20	385	3.10	1110	3.82	2030	4.64	3480
14,	4.79	3800	------	500	------	400	4.23	2700	3.92	2190	2.76	790	3.55	1650	1.76	170	2.14	350	2.90	915	3.60	1710	4.34	2900
15,	6.66	8290	------	500	7.98	12200	4.07	2430	3.58	1680	2.82	840	3.07	1080	1.70	145	2.01	280	2.76	790	3.32	1360	4.03	2370
16,	4.12	2510	------	500	6.28	7280	3.81	2020	3.48	1550	2.81	830	2.78	810	1.66	130	1.88	210	2.62	680	3.13	1140	4.11	2500
17,	4.28	2790	------	500	6.82	8720	3.69	1835	3.76	1940	2.58	650	2.71	750	1.65	130	1.85	200	2.53	610	3.06	1070	3.96	2260
18,	3.88	2130	------	500	6.74	8510	3.79	1985	3.56	1660	2.54	620	2.82	840	1.65	130	1.82	190	2.36	490	2.99	1000	3.74	1910
19,	4.64	3480	------	500	6.10	6810	3.62	1740	3.43	1490	2.48	570	2.56	630	1.56	103	1.78	170	2.28	440	2.98	990	3.55	1450
20,	7.08	9440	------	500	5.43	5200	3.54	1630	3.64	1770	2.39	508	2.51	590	1.62	120	1.86	200	2.31	460	3.04	1050	3.25	1280
21,	7.62	11100	------	500	5.44	5220	3.54	1630	3.52	1610	2.46	560	2.38	500	1.62	120	1.90	220	2.31	460	2.83	850	3.38	1430
22,	5.14	4550	------	500	5.28	4860	3.33	1370	3.29	1320	2.58	650	2.36	490	1.63	120	1.82	190	2.40	515	3.10	1110	3.05	1060
23,	4.24	1550	------	500	8.08	12600	3.24	1270	3.22	1240	2.60	660	2.20	385	1.63	120	1.92	230	2.50	585	3.12	1130	4.30	2830
24,	3.44	1550	------	500	7.40	10390	6.70	8100	3.04	1050	2.48	570	2.20	385	1.66	130	1.80	180	2.47	560	2.98	990	12.12	29300
25,	3.52	1550	------	500	6.48	7810	7.17	9700	2.99	1000	2.85	870	2.31	460	1.62	120	1.88	210	2.27	430	2.93	940	8.53	15000
26,	3.83	1550	------	500	5.56	5500	6.86	8830	2.46	557	2.94	950	2.18	370	1.60	115	1.86	200	2.25	420	2.86	880	6.57	8050
27,	3.54	1550	------	500	5.33	4970	10.14	20300	3.25	1280	2.82	840	2.22	400	1.58	110	1.79	180	2.15	355	2.38	502	5.80	6060
28,	3.66	1550	------	500	6.35	7460	7.32	10200	3.57	1670	2.65	700	2.05	300	1.61	120	1.75	160	2.46	560	2.92	930	7.00	9220
29,	3.61	1550	------	------	6.58	8080	6.17	6990	3.42	1480	2.51	590	2.19	380	1.57	110	1.74	160	4.11	2500	3.05	1060	8.20	12960
30,	3.50	1550	------	------	5.86	6200	5.40	5130	3.10	1110	2.68	700	1.48	80	1.58	110	1.93	240	3.70	1850	3.15	1170	6.50	7860
31,	4.59	1550	------	------	5.08	4420	------	------	2.98	990	------	------	1.93	340	1.60	115	------	------	3.24	1270	------	------	6.68	8350

Note:—Conditions of flow affected by ice conditions January 23 to March 14, 1907. Discharge during ice periods estimated. (See "Estimated Monthly Discharge" for 1907.)

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEMUNG RIVER, AT CHEMUNG, N. Y.

1908	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.70	5870	2.97	600	3.48	1560	6.44	7700	7.33	10180	5.35	5020	2.38	460	2.36	450	1.86	160	1.82	150	2.13	298	2.00	225
2,	5.09	4440	2.87	600	3.42	1480	5.91	6330	7.33	10180	4.57	3340	2.38	460	2.19	330	1.87	168	1.98	220	2.00	225	1.85	160
3,	4.51	3220	2.98	600	5.02	4280	5.46	5270	6.95	9080	4.05	2400	2.35	480	2.22	350	1.83	150	1.86	160	2.03	240	1.85	160
4,	5.09	4440	2.66	600	5.03	4300	5.04	4330	6.09	6780	3.69	1830	2.48	540	2.17	320	1.77	130	1.81	140	1.98	220	1.67	100
5,	4.03	2370	2.75	600	4.54	3280	4.62	3440	5.43	5200	3.48	1560	2.58	610	2.18	330	1.80	140	1.69	102	1.87	170	1.86	160
6,	3.37	1420	2.86	600	4.41	3030	4.49	3180	4.88	3990	3.24	1260	2.71	720	2.15	310	1.80	140	1.81	140	1.88	170	1.84	160
7,	3.21	1230	2.88	600	4.28	2790	4.57	3340	5.01	4260	3.12	1130	2.59	620	2.19	330	1.75	120	1.77	130	1.92	190	1.81	140
8,	3.08	1080	2.93	600	4.35	2920	4.38	2970	8.01	12330	2.98	980	2.34	430	2.41	480	1.75	120	1.77	130	1.90	180	1.92	190
9,	3.38	1430	2.91	600	4.15	2570	5.51	5380	8.31	13330	2.89	890	2.21	350	2.32	420	1.75	120	1.78	130	1.84	160	1.80	140
10,	3.09	1090	2.73	600	4.09	2460	5.54	5450	8.45	13800	2.91	910	2.17	320	2.41	480	1.75	120	1.74	120	1.86	160	1.89	180
11,	3.08	1080	2.83	600	4.08	2450	4.75	3720	7.63	11110	2.92	920	2.16	320	2.33	430	1.75	120	1.81	140	1.92	190	2.04	125
12,	3.33	1370	2.87	600	6.31	7360	4.55	3300	6.29	7300	2.86	860	2.05	252	2.17	320	1.79	120	1.71	110	1.83	152	1.96	125
13,	6.01	6580	2.78	600	9.67	18360	4.28	2790	5.45	5250	2.71	720	2.61	640	2.17	320	1.73	120	1.89	180	1.89	180	------	125
14,	6.33	7410	3.10	600	13.38	35300	4.13	2530	4.95	4140	2.71	720	2.65	670	2.19	330	1.69	102	1.86	160	1.89	180	------	125
15,	5.05	4250	5.48	5310	10.67	22530	3.98	2290	5.35	5020	2.63	660	2.46	520	2.22	350	1.66	90	1.97	210	1.90	180	------	125
16,	4.62	3440	14.75	42900	12.69	32010	4.29	2810	6.35	7460	2.61	640	2.35	440	2.07	260	1.65	90	1.81	140	1.86	160	------	125
17,	4.12	2510	8.07	12530	8.51	14030	4.40	3010	6.25	7200	2.66	680	2.27	390	2.19	330	1.62	81	1.93	190	1.88	170	------	125
18,	3.69	1840	6.12	6860	6.82	8720	4.07	2430	5.48	5310	2.53	570	2.24	370	2.17	320	1.68	100	1.76	130	1.91	180	------	125
19,	3.73	1900	5.23	4750	8.22	13030	4.53	3260	4.93	4090	2.54	580	2.10	280	2.56	598	1.70	105	1.73	120	1.91	180	------	125
20,	3.51	1590	4.55	3300	7.59	10980	6.53	7940	4.58	3360	2.45	510	2.17	310	2.41	480	1.68	100	1.89	180	1.94	200	------	125
21,	3.51	1590	4.41	3030	5.99	6530	6.17	6990	4.86	3950	2.35	440	2.13	300	2.27	390	1.64	90	1.75	120	1.90	180	------	125
22,	3.51	1590	4.13	2530	5.87	6230	5.41	5150	5.18	4640	2.43	500	2.33	430	2.21	350	1.70	105	1.70	105	1.87	170	------	125
23,	4.18	2620	3.80	2000	6.14	6910	4.91	4050	4.77	3760	2.30	405	3.82	2030	2.11	290	1.73	120	1.80	140	1.99	220	------	125
24,	3.71	1870	3.59	1697	6.85	8890	4.51	3220	4.41	3030	2.43	500	3.00	1000	2.07	260	1.69	102	1.76	130	2.02	240	------	125
25,	2.91	910	3.42	1480	7.77	11550	4.23	2700	4.08	2450	3.05	1050	4.28	2790	2.03	240	1.67	90	1.90	180	2.02	240	------	125
26,	2.70	715	3.63	1750	6.76	8560	4.05	2400	3.73	1900	2.91	910	4.64	3480	2.04	250	1.67	90	1.77	130	2.01	230	------	125
27,	3.43	------	4.53	3260	8.03	12400	3.87	2110	3.93	2210	2.65	670	3.51	1590	1.94	200	1.68	100	2.02	240	1.96	210	------	125
28,	8.23	------	4.23	2700	9.25	16730	4.08	2450	4.48	3160	2.51	560	3.07	1070	1.95	200	1.64	90	2.64	664	1.92	190	------	125
29,	3.08	------	3.65	1780	10.31	20980	4.13	2530	3.90	2160	2.45	510	2.73	740	1.91	184	1.74	120	2.49	540	1.87	170	------	125
30,	3.57	------	------	------	9.12	16240	3.79	1980	4.73	3670	2.39	470	2.59	620	1.91	184	1.75	120	2.28	390	1.91	180	------	125
31,	3.04	------	------	------	7.19	9760	------	------	5.90	6300	------	------	2.45	510	1.92	190	------	------	2.26	380	------	------	------	125

Note:—Ice conditions from about January 27 to February 14 and from about December 11 to 31, 1908. Discharge during ice periods estimated. (See 'Estimated Monthly Discharge" for 1908.)

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEMUNG RIVER, AT CHEMUNG, N. Y.

1909. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	300	------	1000	4.72	3530	5.33	4870	15.39	46200	2.95	898	2.66	655	1.80	140	1.70	105	1.80	140	1.91	184	1.88	172
2,	------	300	------	900	4.44	2990	5.37	4970	15.15	45000	2.79	757	2.43	491	1.80	140	1.67	96	1.72	112	1.94	198	1.93	194
3,	------	300	------	1000	4.64	3370	5.47	5210	9.61	18100	2.72	701	2.40	470	1.80	140	1.70	105	1.72	112	1.85	160	1.93	194
4.	------	300	------	1000	4.56	3210	5.19	4550	7.73	11400	2.64	640	2.30	405	1.80	140	1.76	126	1.69	102	1.85	160	1.79	136
5,	------	1500	------	1000	4.06	2330	4.93	3970	6.67	8320	3.29	1250	2.28	392	1.78	133	1.74	119	1.68	99	1.85	160	1.90	180
6.	4.93	3970	------	2000	3.64	1700	5.03	4190	5.91	6320	6.85	8800	2.27	386	1.78	133	1.60	75	1.74	119	1.80	140	1.79	136
7,	5.20	4570	7.16	9670	4.14	2460	6.15	6940	5.81	6060	4.97	4050	2.26	379	1.76	126	1.71	108	1.72	112	1.66	93	1.80	140
8,	3.38	1360	5.16	4480	4.26	2660	5.85	6160	5.27	4730	4.10	2390	2.20	340	1.77	130	1.69	102	1.70	105	1.82	148	1.80	140
9,	3.07	1020	4.38	2870	4.18	2530	5.08	4300	4.82	3730	3.66	1720	2.15	310	1.72	112	1.72	112	1.74	119	1.96	207	1.87	150
10,	3.20	1150	4.11	2410	5.92	6340	4.79	3670	4.99	4100	3.70	1780	2.12	292	1.71	108	1.74	119	1.76	126	1.93	194	------	150
11,	3.42	1410	4.32	2770	7.48	10600	4.45	3000	4.77	3630	7.12	9560	2.09	274	1.66	93	1.90	180	1.74	119	1.90	180	1.85	150
12,	2.96	907	3.60	1640	5.54	5380	4.25	2640	4.37	2860	5.29	4780	2.08	269	1.66	93	1.80	140	1.80	140	1.86	164	------	150
13,	2.86	816	3.68	1750	5.08	4300	4.19	2540	4.18	2530	4.40	2910	2.10	280	1.68	99	1.74	119	1.74	119	1.84	156	------	160
14,	------	700	3.52	1540	4.84	3770	8.02	12400	4.23	2610	6.04	6650	1.96	207	1.65	90	1.96	207	1.76	126	1.88	172	------	180
15,	------	600	3.84	1980	4.56	3210	10.73	22800	4.23	2610	5.52	5330	1.96	207	1.72	112	1.76	126	1.95	202	1.76	126	------	200
16,	------	600	4.46	3020	4.21	2580	7.50	10700	4.29	2710	4.50	3100	1.98	216	1.66	93	1.84	156	1.84	156	1.85	160	------	210
17,	------	600	3.80	1920	3.93	2120	6.31	7360	4:05	2310	3.98	2200	1.94	198	1.82	148	1.89	176	1.88	172	1.73	116	------	220
18,	------	500	3.76	1870	3.64	1700	5.48	5230	3.83	1970	4.57	3230	1.88	172	1.84	156	1.80	140	1.78	133	1.70	105	------	230
19,	------	500	3.65	1710	3.56	1590	5.01	4140	3.68	1750	4.33	2780	1.90	180	1.78	133	1.86	164	1.85	160	1.70	105	------	230
20,	------	500	7.37	10300	3.57	1600	4.66	3470	3.57	1600	3.75	1850	1.90	180	1.92	189	1.64	87	1.76	126	1.78	133	------	230
21,	------	500	7.70	11300	3.45	1450	4.61	3310	3.43	1420	3.44	1440	1.88	172	1.84	156	1.82	148	1.78	133	1.78	133	2.82	230
22,	------	500	6.44	7700	3.27	1230	4.65	3390	3.32	1290	3.26	1220	1.89	176	1.82	148	1.80	140	1.88	172	1.74	119	------	230
23,	------	1000	7.33	10200	3.17	1120	4.59	3270	3.23	1180	3.38	1360	2.01	230	1.71	108	1.78	133	1.92	189	1.86	164	------	230
24,	6.96	9110	10.06	19900	3.04	985	4.15	2480	3.14	1090	3.43	1420	2.03	242	1.85	160	1.74	119	1.84	156	1.72	112	------	230
25,	9.31	17000	11.01	24000	3.21	1160	3.92	2110	3.11	1060	3.36	1340	2.00	225	1.80	140	1.81	144	1.94	198	1.72	112	------	230
26,	6.70	8400	6.93	9020	3.27	1230	3.67	1740	3.03	975	3.00	945	2.02	236	1.82	148	1.76	126	2.08	269	2.01	230	------	230
27,	5.18	4440	6.06	6710	4.73	3550	3.57	1600	2.99	936	2.84	799	2.04	247	1.82	148	1.70	105	2.10	280	1.92	189	------	230
28,	4.48	3060	5.41	5060	4.87	3840	3.53	1550	3.03	975	2.81	774	1.93	194	1.80	140	1.86	164	2.05	252	1.89	176	------	230
29.	3.88	2040	------	------	5.27	4730	3.87	2030	3.43	1420	2.66	655	1.94	198	1.83	152	1.78	133	2.02	236	1.94	198	------	230
30,	3.48	1480	------	------	5.17	4500	8.75	14900	3.31	1280	2.78	749	1.87	168	1.66	93	1.88	172	1.99	220	1.88	172	------	230
31,	------	1200	------	------	5.05	4230	------	------	3.08	1020	------	------	1.80	140	1.76	126	------	------	2.00	225	------	------	------	230

Note:--Ice conditions prevailed from about January 1 to 5, 14 to 23, January 31 to February 6 and December 9 to 31.
Daily discharges for open water period obtained from a well defined rating curve. Daily discharges for ice periods estimated on the basis of discharge at other stations in the Susquehanna drainage.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEMUNG RIVER, AT CHEMUNG, N. Y.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	350	2.94	888	14.62	42400	3.56	1590	7.00	9220	3.65	1710	2.36	444	1.78	133	1.72	112	2.36	444	1.78	133	2.84	799
2,	------	350	2.84	800	14.48	41700	3.38	1360	8.40	13600	3.51	1520	2.31	412	1.84	156	1.72	112	2.13	298	1.81	144	2.86	816
3,	------	350	3.00	945	12.90	33000	3.21	1160	8.15	12800	3.38	1360	2.25	372	1.86	164	1.76	126	2.08	269	1.82	148	2.60	610
4,	------	350	2.76	733	10.86	23100	3.14	1090	9.24	16700	3.24	1200	2.21	346	1.86	164	1.81	144	2.06	258	1.84	156	2.61	618
5,	------	350	2.60	610	9.46	17500	3.24	1200	7.47	10600	3.19	1140	2.22	353	1.80	140	1.86	164	1.92	189	1.83	152	2.57	589
6,	------	350	3.67	600	9.83	19000	3.24	1200	6.31	7360	3.13	1080	2.19	334	1.73	116	1.88	172	1.94	198	1.77	130	2.40	470
7,	------	350	------	600	11.92	28300	3.13	1080	5.57	5460	3.15	1100	2.23	360	1.75	122	2.04	247	1.90	180	1.76	126	2.62	400
8,	------	350	------	600	9.46	17500	3.00	945	5.07	4270	3.15	1100	2.13	298	1.72	112	2.01	230	1.80	140	1.77	130	2.57	400
9,	------	350	------	600	7.38	10300	3.00	945	4.79	3670	3.08	1020	2.19	334	1.76	126	2.04	247	1.83	152	1.80	140	2.50	400
10,	------	350	------	600	6.26	7230	2.92	869	4.69	3470	2.91	860	2.08	269	1.82	148	2.05	252	1.86	164	1.83	152	2.40	400
11,	------	350	------	600	5.68	5730	2.74	717	4.37	2860	3.03	975	2.10	280	1.80	140	2.38	457	1.86	164	1.89	176	------	400
12,	------	350	------	600	5.36	4940	2.70	685	4.08	2360	3.35	1320	2.11	286	1.84	156	1.85	160	1.81	144	1.91	184	------	400
13,	------	350	------	600	5.16	4480	2.71	693	3.87	2030	3.33	1300	------	*286	1.87	168	1.92	189	1.76	126	1.98	216	------	400
14,	------	350	------	600	5.04	4210	2.66	656	3.66	1720	3.13	1080	------	*526	1.86	164	1.78	133	1.78	133	2.12	292	------	400
15,	------	350	------	600	4.58	3250	2.50	540	3.51	1520	2.99	936	2.48	526	1.74	119	1.76	126	1.79	136	2.14	304	------	400
16,	------	350	------	600	4.38	2870	2.52	554	3.41	1400	2.87	825	2.17	322	1.82	148	1.78	133	1.74	119	2.04	247	------	400
17,	------	350	------	600	4.30	2730	2.48	536	3.29	1250	3.37	1350	2.10	280	1.80	140	1.74	119	1.64	87	2.20	340	------	400
18,	------	350	------	600	4.08	2340	2.51	547	3.19	1140	4.15	2480	2.12	292	1.75	122	1.78	133	1.72	112	2.18	328	------	400
19,	------	350	------	600	3.98	2200	4.14	2460	3.09	1040	4.85	3800	2.08	269	1.76	126	1.71	108	1.71	108	2.20	340	------	400
20,	------	350	------	600	4.65	3390	4.88	3860	3.04	985	3.93	2120	2.06	258	1.74	119	1.74	119	1.70	105	2.13	298	------	400
21,	------	350	------	600	6.25	7200	5.36	4940	3.13	1080	3.49	1500	2.02	236	1.74	119	1.72	112	1.60	75	2.10	280	------	400
22,	11.62	26900	------	600	5.92	6340	4.04	2290	3.16	1110	3.21	1160	1.94	198	1.71	108	1.78	133	1.66	93	2.08	269	------	400
23,	8.76	14900	------	600	5.87	6210	4.64	3370	3.10	1040	3.01	955	1.96	207	1.80	140	1.67	96	1.62	81	2.08	269	------	400
24,	6.01	6580	------	600	5.82	6080	8.08	12600	3.43	1420	2.85	808	1.96	207	1.78	133	1.72	112	1.62	81	2.05	252	------	400
25,	5.00	4120	------	600	5.82	6080	16.56	52800	4.65	3390	2.74	717	1.98	216	1.75	122	1.72	112	1.72	112	2.09	274	------	400
26,	4.26	2660	------	600	5.66	5680	14.10	39800	6.01	6580	2.47	519	2.02	236	1.70	105	1.85	160	1.68	99	2.14	304	------	400
27,	3.97	2180	------	600	5.02	4160	10.76	22900	5.07	4270	2.53	561	1.87	168	1.74	119	1.83	152	1.73	116	2.38	457	------	400
28,	3.71	1790	11.18	24800	4.61	3310	7.39	10400	4.50	3100	2.47	519	1.92	189	1.73	116	2.58	596	1.76	126	2.42	484	------	400
29,	3.46	1460	------	------	4.24	2630	6.16	6970	4.05	2310	2.40	470	1.89	176	1.68	99	2.62	625	1.78	133	2.50	540	------	400
30,	3.04	985	------	------	4.00	2230	9.00	15800	3.80	1920	2.41	477	1.87	168	1.74	119	2.49	533	1.78	133	2.64	640	------	400
31,	3.08	1020	------	------	3.80	1920	------	------	3.75	1850	------	------	1.86	164	1.72	112	------	------	1.78	133	------	------	------	400

Note:—Relation of gage height to discharge probably affected by ice January 1 to 21, February 6 to 27 and December 7 to 31. Daily discharge determined from a fairly well defined discharge rating curve. Discharge July 13 to 14 estimated. Discharge during ice periods estimated. See "Estimated Monthly Discharge" for 1910.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEMUNG RIVER, AT CHEMUNG, N. Y.

1911. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	2000	3.60	1500	5.10	------	4.70	3170	3.55	1440	2.19	315	1.93	192	1.65	90	2.80	690	3.00	860	2.75	655	3.30	1160
2,	------	4000	3.65	1560	4.40	------	4.30	2470	4.50	2800	2.21	325	1.89	176	1.71	108	2.55	520	3.70	1620	2.95	815	3.15	1010
3,	7.90	11400	3.35	1220	4.10	------	4.00	2020	4.60	2980	2.33	388	1.90	180	1.61	78	2.37	412	4.50	2800	2.95	815	3.05	910
4,	5.80	5550	3.10	960	3.70	------	3.85	1820	4.00	2020	2.22	330	1.93	192	1.61	78	2.23	335	3.75	1680	2.80	690	2.95	815
5,	4.50	2800	3.15	1010	3.50	------	4.40	2630	3.70	1620	2.27	355	1.89	176	1.59	73	2.13	285	3.45	1320	2.70	620	2.75	655
6,	4.00	2020	3.00	860	3.40	------	7.30	9600	3.50	1380	2.29	365	1.77	130	1.65	90	2.11	275	3.45	1320	2.67	599	2.85	730
7,	3.95	1950	2.85	730	3.15	------	8.50	13500	3.35	1220	4.00	2020	1.79	136	1.59	73	2.29	365	3.50	1380	2.70	620	2.75	655
8,	4.10	2160	3.00	------	3.05	------	7.80	11100	3.10	960	3.25	1110	1.76	126	1.66	93	2.73	641	4.90	3560	2.85	730	2.75	655
9,	3.60	1500	3.10	------	3.20	------	6.40	7050	3.10	960	2.95	815	1.75	122	1.67	96	2.57	532	4.00	2020	3.25	1110	2.85	730
10,	3.35	1220	3.10	------	3.75	------	6.70	7840	3.00	860	2.70	620	1.75	122	1.61	78	3.25	1110	3.60	1500	3.10	960	3.00	860
11.	3.25	1110	2.90	------	5.40	4620	6.00	6050	2.95	815	2.50	490	1.76	126	1.63	84	3.65	1560	3.55	1440	2.95	815	3.70	1620
12,	3.60	1500	2.85	------	6.30	6800	5.50	4840	2.90	770	2.48	478	1.73	116	1.59	73	3.15	1010	4.00	2020	2.90	770	3.60	1500
13,	5.70	5300	2.70	------	3.40	1270	5.10	3960	2.80	690	4.50	2800	1.69	102	1.56	66	2.90	770	3.80	1750	2.95	815	4.00	2020
14,	5.00	3760	2.65	------	6.40	7050	4.80	3360	2.70	620	4.60	2980	1.69	102	1.49	52	2.85	730	3.50	1380	3.20	1060	6.50	7300
15,	8.70	14200	2.45	------	6.40	7050	5.30	4400	2.65	585	3.70	1620	1.67	96	1.67	96	2.65	585	3.25	1110	3.05	910	5.30	4400
16,	6.20	6550	2.60	------	5.70	5300	5.00	3760	2.60	550	3.30	1160	1.64	87	1.59	73	2.55	520	3.10	960	2.95	815	5.80	5550
17,	4.70	3170	2.65	------	4.40	2630	4.70	3170	2.60	550	3.00	860	1.68	99	1.63	84	2.75	655	3.00	860	2.90	770	6.00	6050
18,	4.20	2310	3.35	------	4.50	2800	4.40	2630	2.60	550	2.80	690	1.78	133	1.63	84	2.55	520	3.10	960	2.90	770	5.40	4620
19,	3.95	1950	5.90	------	4.10	2160	4.30	2470	2.60	550	2.60	550	1.79	136	1.74	119	2.45	460	3.70	1620	3.50	1380	4.80	3360
20,	3.80	1750	4.80	------	3.85	1820	5.40	4620	3.25	1110	2.50	490	1.95	200	1.65	90	2.33	388	3.60	1500	3.70	1620	4.20	2310
21,	3.60	1500	3.95	------	3.90	1880	6.50	7300	3.30	1160	2.37	412	1.97	208	1.67	96	2.23	335	3.35	1220	3.40	1270	3.85	1820
22,	3.50	1380	3.65	------	4.30	2470	5.80	5500	2.90	770	2.31	376	1.85	160	1.60	75	2.19	315	3.20	1060	3.25	1110	3.80	1750
23,	3.40	1270	3.55	------	5.80	5550	6.00	6050	2.70	620	2.19	315	1.75	122	1.61	78	2.11	275	3.25	1110	3.15	1010	3.85	1820
24,	3.10	960	3.45	------	5.20	4180	5.60	5060	2.60	550	2.17	305	1.75	122	1.58	71	2.06	250	3.35	1220	3.05	910	4.30	2470
25.	3.00	860	3.45	------	4.20	2310	5.00	3760	2.65	585	2.11	275	1.72	112	1.67	96	2.08	260	3.20	1060	3.10	960	3.90	1880
26,	3.00	860	3.50	------	4.20	2310	4.50	2800	2.60	550	2.19	315	1.69	102	1.71	108	2.11	275	3.05	910	3.20	1060	3.70	1620
27,	2.95	815	6.60	------	5.20	4180	4.20	2310	2.47	472	2.07	255	1.69	102	1.63	84	2.03	235	2.90	770	3.10	960	3.75	1680
28,	5.20	4180	6.90	------	8.60	13800	4.00	2020	2.35	400	2.07	255	1.69	102	1.71	108	2.03	235	2.85	730	3.05	910	4.20	2310
29,	6.10	6300	------	------	6.70	7840	3.75	1680	2.60	550	2.00	220	1.67	96	3.10	960	2.19	315	2.80	690	3.20	1060	3.40	1270
30,	5.10	3960	------	------	5.60	5060	3.60	1500	2.18	310	1.99	216	1.65	90	4.30	2470	2.19	315	2.75	655	3.85	1820	3.25	1110
31,	4.30	2470	------	------	5.20	4180	------	------	2.22	330	------	------	1.61	78	3.25	1110	------	------	2.71	627	------	------	3.30	1160

Note:—River frozen February 8 to March 10 inclus., and daily discharge estimated from one ice measurement, and climatological records.

ESTIMATED MONTHLY DISCHARGE OF CHEMUNG RIVER, AT CHEMUNG, N. Y.

(Drainage Area 2440 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1903.					
September 7-30,	3855	397	1146	0.47	0.42
October,	18460	409	3981	1.63	1.88
November,	12910	705	2265	.93	1.04
December,	1791	536	757	.31	.36
a 1904.					
March 8-31,	36460	1697	10330	4.23	3.90
April,	17260	2988	6645	2.72	3.03
May,	16660	1300	4940	2.02	2.33
June,	35860	645	4063	1.67	1.86
July,	2095	415	820	.336	.387
August,	900	246	463	.190	.219
September,	497	246	267	.109	.122
October,	1732	210	656	.269	.310
November,	510	246	347	.142	.158
December,	7855	100	785	.322	.371
b 1905.					
January 1-15,	5920	615	1870	0.77	0.89
February,	----------	----------	900	0.37	0.38
March 19-31,	39800	----------	10900	4.47	5.15
April,	6420	1580	3280	1.34	1.50
May,	1430	385	728	.298	.34
June,	22000	298	2960	1.21	1.35
July,	4280	337	1040	.426	.49
August,	2400	220	622	.255	.29
September,	757	204	390	.16	.18
October,	1010	200	491	.201	.23
November,	2350	314	579	.237	.26
December,	9360	630	2900	1.19	1.37
c 1906.					
January,	12600	660	2300	.943	1.09
February,	----------	----------	2000	.82	.85
March,	28400	385	3670	1.50	1.73
April,	13600	†1230	6040	2.48	2.77
May,	14600	1070	2680	1.10	1.27
June,	9530	861	2780	1.147	1.27
July,	4680	437	905	.371	.43
August,	2560	373	975	.40	.46
September,	379	82	204	.084	.09
October,	5130	100	1120	.459	.53
November,	6890	676	1960	.803	.90
December,	7230	482	2090	.857	.99
The year,	28400	82	2230	.913	12.38

a January and February—no estimates made.

b A comparison of these figures with those for the discharge of the Susquehanna River at McCalls Ferry indicates that the mean discharge at the station for the period of 1905 not included in the table was approximately as follows:

January 16-31, about 1700 second-feet; February, about 900 second-feet; March 1-18, about 2500 second-feet.

Values for 1905 are excellent.

c Estimates for frozen periods of 1906 are based on discharge of Susquehanna River at Binghamton.

Values for 1906 are excellent, except those for February, which are fair.

ESTIMATED MONTHLY DISCHARGE OF CHEMUNG RIVER, AT CHEMUNG, N. Y.

(Drainage Area 2440 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a 1907.					
January,	14700	----------	5000	2.05	2.36
February,	----------	----------	972	.398	.41
March,	12600	----------	4250	1.74	2.01
April,	9300	1270	3790	1.55	1.73
May,	6180	557	2350	.963	1.11
June,	3780	508	1100	.451	.50
July,	3400	80	898	.368	.42
August,	260	103	162	.066	.08
September,	385	109	214	.088	.10
October,	2500	355	845	.346	.40
November,	9110	502	2310	.947	1.06
December,	29300	585	4670	1.91	2.20
The year,	29300	80	2210	.906	12.38
b 1908.					
January,	7410	715	2400	0.984	1.13
February,	42900	----------	3590	1.47	1.58
March,	35300	1480	10300	4.22	4.86
April,	7940	1980	3830	1.57	1.75
May,	13800	1900	6020	2.47	2.85
June,	5020	405	1070	.439	.49
July,	3480	252	765	.314	.36
August,	598	184	332	.136	.16
September,	168	81	115	.047	.05
October,	664	102	194	.080	.09
November,	298	152	193	.079	.09
December,	----------	----------	137	.056	.06
The year,	42900	81	2410	.989	13.47
1909.					
January,	17000	300	2280	.934	1.08
February,	24000	900	5310	2.18	2.27
March,	10600	985	3100	1.27	1.46
April,	22800	1550	5320	2.18	2.43
May,	46200	936	6170	2.53	2.92
June,	9560	640	2540	1.04	1.16
July,	655	140	275	.113	.13
August,	189	90	130	.053	.06
September,	207	75	132	.054	.06
October,	280	99	159	.065	.07
November,	230	93	156	.064	.07
December,	230	136	196	.080	.09
The year,	46200	75	2150	.890	11.80

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a During the period of ice conditions the discharge was estimated on the basis of the discharge of Chenango River at Binghamton and climatological reports.

	Second-feet.
Discharge January 23 to 31, 1907,	1,550
Discharge February 1 to 12, 1907,	1,600
Discharge February 13 to 28, 1907,	500
Discharge March 1 to 14, 1907,	400

b Discharge during frozen periods estimated on the basis of the discharge of adjacent drainages. It is only roughly approximate.

	Second-feet.
Discharge February 1 to 14, 1908,	600
Discharge December 11 to 31, 1908,	125

ESTIMATED MONTHLY DISCHARGE OF CHEMUNG RIVER, AT CHEMUNG, N. Y.

(Drainage Area 2440 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a 1910.					
January,	26900	------------	2260	.926	1.07
February,	24800	------------	1500	.615	.64
March,	42400	1920	10600	4.34	5.00
April,	52100	536	6460	2.65	2.96
May,	16700	985	4240	1.74	2.01
June,	3800	470	12000	.492	.55
July,	526	164	291	.119	.14
August,	168	99	131	.054	.062
September,	625	96	204	.084	.094
October,	444	75	152	.062	.071
November,	640	126	264	.108	.12
December,	816	------------	448	.184	.21
The year,	26900	75	2310	.947	12.92
b 1911.					
January,	14200	815	3250	1.330	1.530
February,	------------	------------	1390	0.570	0.590
March,	13800	------------	3450	1.410	1.630
April,	13500	1500	4610	1.890	2.110
May,	2980	310	946	0.388	0.450
June,	2980	216	724	0.297	0.330
July,	208	78	130	0.053	0.060
August,	2470	52	224	0.092	0.110
September,	1560	235	506	0.207	0.230
October,	3560	627	1350	0.553	0.640
November,	1820	599	947	0.388	0.430
December,	7300	655	2120	0.869	1.000
The year,	------------	------------	1640	0.671	9.110

a Discharge for periods during which ice existed estimated by means of climatologic records and records of discharge at Wilkes-Barre and at Rochester.

Mean discharge January 1 to 21 estimated 350 second-feet; probably about constant.

Mean discharge February 6 to 27 estimated 600 second-feet, ranging from about 400 to about 1500 second-feet.

Mean discharge December 7 to 31 estimated 400 second-feet; probably about constant.

b River frozen February 8 to March 10 inclusive, and daily discharge estimated from one ice measurement, and climatological records.

WYALUSING CREEK.

DESCRIPTION OF BASIN.

Wyalusing creek, a tributary of the North Branch of the Susquehanna river, in Susquehanna and Bradford counties, drains approximately 215 square miles. Rising in three branches, the headwaters of which spread over the central and western parts of Susquehanna county, and join near Rushville near the Susquehanna-Bradford county line, it follows a general southwesterly course to its mouth at Wyalusing, Bradford county, a distance of approximately 30 miles. The basin is sparsely populated, the habitations being scattered over the agricultural section and in small villages, the watershed consisting of hilly, farming country, containing little timber except on the hilltops. The principal tributaries are the North, Middle and East Branches, which form its headwaters, and include a number of lakes in their watersheds. This creek lies entirely within the glacial area, the slope being gradual throughout most of its course. Wyalusing creek is used to a limited extent for power purposes.

The mean annual precipitation over this watershed is from 35 to 40 inches.

The discharge of this stream has been measured since October 28, 1908, at Wyalusing, 2½ miles above the mouth.

SUSQUEHANNA BASIN—STATION NO. 4.

WYALUSING CREEK AT WYALUSING.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania on October 28, 1908, at a single span, steel, through truss, highway bridge, about 2½ miles above the mouth.

The channel is straight for 1,000 feet above and below the station. The right bank is high and not subject to overflow, while the left bank is low and water passes around the bridge at high stages. There is an abandoned head race to the left of the bridge through which water passes above gage height 2.9 feet. The bed of the stream is rocky and permanent.

Discharge measurements are taken from the downstream side of the bridge, and by wading at a section 600 feet below during low water. The initial point for soundings is top edge of east abutment, downstream side.

A standard chain gage is fastened to the bottom chord on the downstream side of the bridge. The length of chain from bottom of weight to center of marker is 16.77 feet. The elevation of zero is arbitrary datum. Bench Mark No. 1 is a projection on the second stone in the bottom course of the face of the upstream wing of the left abutment, one foot from the first vertical joint of the abutment; elevation 5.512 feet above zero of gage. The gage is read once daily by Alton S. Taylor.

There are several mills on the stream above the bridge.

Since the establishment of the station, 28 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF WYALUSING CREEK, AT WYALUSING, BRADFORD COUNTY, PENNA.

(Drainage Area 214 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Discharge.	Gage height.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1908.							
1.	Aug. 5,	Grant,	32	23	1.00	.43	23.4	Wading msmt. 600 ft. upstream from bridge.
2.	Sept. 24,	do	24	11	.34	.19	3.7	Wading msmt. 600 ft. upstream from bridge.
3.	Nov. 30,	do	43	38	.80	.60	29.9	Wading msmt. 600 ft. upstream from bridge.
	1909.							
4.	Feb. 25,	Ryder,	125	340	4.06	2.98	1381	0.6 msmt.
5.	May 3,	Grant,	123	314	3.64	2.72	1145	Surface msmt.
6.	June 2,	Gannett & Grant,	52	39	1.25	.62	49	Wading msmt above bridge.
	1910.							
7.	April 21,	Langenheim,	113	138	1.30	1.15	180	0.6 msmt.
8.	May 9,	do	114	160	1.76	1.47	282	Surface msmt.

DISCHARGE MEASUREMENTS OF WYALUSING CREEK, AT WYALUSING, BRADFORD COUNTY, PENNA.

(Drainage Area 214 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1911.							
9.	May 25,	Ryder,	50	49	.85	.61	41	Wading msmt above bridge.
	1912.							
10.	April 30,	Boehringer,	129	432	4.34	3.67	1897	Surface msmt.
11.	April 30,	do	129	421	4.29	3.59	1828	Surface msmt.
12.	April 30,	do	129	410	4.23	3.51	1749	Surface msmt.
13.	April 30,	do	128	399	4.17	3.39	1675	Surface msmt.
14.	April 30,	do	126	366	3.99	3.17	1464	Surface msmt.
15.	May 1,	do	123	314	3.51	2.77	1102	Surface msmt.
16.	May 1,	do	123	310	3.45	2.69	1068	Surface msmt.
17.	May 1,	do	122	292	3.26	2.57	951	0.6 msmt.
18.	May 1,	do	122	292	3.24	2.54	946	0.6 msmt.
19.	May 1,	do	122	292	3.20	2.53	935	Surface msmt.
20.	May 2,	do	120	244	2.79	2.18	681	0.6 msmt.
21.	May 2,	do	120	244	2.75	2.17	671	Surface msmt.
22.	May 2,	do	119	244	2.69	2.16	656	0.6 msmt.
23.	May 2,	do	118	238	2.66	2.12	633	Surface msmt.
24.	May 2,	do	118	233	2.55	2.08	595	0.6 msmt.
25.	May 3,	Taylor,	116	209	1.98	1.84	413	Surface msmt.
26.	May 3,	do	116	197	1.80	1.72	354	Surface msmt.
27.	May 4,	do	115	180	1.66	1.58	298	Surface msmt.
28.	May 4,	do	114	169	1.38	1.52	234	Surface msmt.

DISCHARGE TABLE FOR WYALUSING CREEK, AT WYALUSING, BRADFORD COUNTY, FROM DEC. 1, 1908.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.10	2	.30	204	.40	846	.50	1832	5.00	3335
.20	4	.40	242	.50	928	.60	1926	.50	3880
.30	9	.50	284	.60	1012	.70	2024	6.00	4460
.40	16	.60	328	.70	1098	.80	2122	.50	5060
.50	25	.70	376	.80	1186	.90	2220	7.00	5700
.60	36	.80	428	.90	1276	4.00	2318	.50	6360
.70	50	.90	485	3.00	1366	.10	2415	8.00	7100
.80	66	2.00	550	.10	1456	.20	2515	.50	7900
.90	86	.10	620	.20	1550	.30	2615	9.00	8700
1.00	112	.20	692	.30	1644	.40	2715	10.00	10300
.10	140	.30	768	.40	1738	.50	2815	11.00	11900
.20	170								

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WYALUSING CREEK, AT WYALUSING, BRADFORD COUNTY, PA.

1908. DAY.	DEC.	
	G H	Dis.
1,	.60	36
2,	.60	36
3,	.60	36
4,	a.54	29
5,	.52	27
6,	.60	36
7,	.60	36
8,	.60	36
9,	.60	36
10,	.60	36
11,	.60	36
12,	.60	36
13,	.63	40
14,	.62	39
15,	.60	36
16,	.60	36
17,	.60	36
18,	.62	39
19,	.70	50
20,	.70	50
21,	.64	42
22,	.62	39
23,	.62	39
24,	.80	66
25,	.82	70
26,	.80	66
27	.52	27
28,	.80	66
29,	.82	70
30,	.82	70
31,	.82	70

a Creek frozen.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WYALUSING CREEK, AT WYALUSING, BRADFORD COUNTY, PA.

1909. Day.	JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	*.63	40	.61	37	.31	10	.30	9	.36	13	.39	15	.64	42
2,	.63	40	.57	33	.27	8	.26	7	[illegible]	12	.38	15	.54	29
3,	.60	36	.53	28	.25	6	.22	5	.23	6	.41	17	.48	23
4,	.64	42	.52	27	.35	12	.32	10	.26	7	.32	10	.51	26
5,	.82	70	.50	25	.27	8	.21	4	.25	6	.35	12	.47	22
6,	1.31	208	.50	25	.22	5	.24	6	.32	10	.39	15	.43	19
7,	1.00	112	.46	21	.26	7	.22	5	.30	9	.31	10	.50	25
8,	.86	78	.49	24	.27	8	.30	9	.23	6	.32	10	.54	29
9,	.80	66	.44	20	.28	8	.28	8	.39	15	.31	10	a.77	61
10,	.96	102	.40	16	.26	7	.33	11	.35	12	.38	15	.57	33
11,	1.21	173	.39	15	.30	9	.22	5	.38	15	.39	15	.53	28
12,	1.06	129	.40	16	.22	5	.23	6	.50	25	.39	15	.51	26
13,	.94	96	.36	13	.21	4	.25	6	.72	53	.46	21	.46	21
14,	1.54	302	.37	14	.25	6	.34	12	.60	36	.45	20	.76	60
15,	1.24	184	.42	18	.26	7	.31	10	.56	32	.35	12	1.27	194
16,	1.05	[illegible]	.33	11	.26	7	.30	9	.51	26	.48	23	.89	84
17,	1.08	[illegible]	.32	10	.28	8	.29	8	.48	23	.42	18	.80	66
18,	2.90	1276	.30	9	.28	8	.28	8	.41	17	.36	13	.90	86
19,	1.84	451	.36	13	.34	12	.27	8	.35	12	.38	15	1.39	238
20,	1.48	276	.42	18	.42	18	.26	7	.35	12	.40	16	1.26	190
21,	1.28	197	.44	20	.34	12	.24	6	.30	9	.39	15	.90	86
22,	1.12	146	.32	10	.32	10	.30	9	.38	15	.30	9	.81	68
23,	1.09	137	.40	16	.37	14	.24	6	.35	12	.33	11	.74	56
24,	.96	102	.46	21	.32	10	.26	7	.31	10	.32	10	.71	52
25,	.86	78	.50	25	.28	8	.23	6	.40	16	.29	8	.68	47
26,	1.32	212	.44	20	.31	10	.42	18	.48	23	.39	15	.65	43
27,	.91	89	.41	17	.26	7	.44	20	.48	23	.48	23	.64	42
28,	.80	66	.39	15	.24	6	.24	6	.42	18	.41	17	.66	44
29,	.70	50	.34	12	.34	12	.28	8	.41	17	.43	19	.70	50
30,	.68	47	.38	15	.38	15	.36	13	.36	13	.58	34	.62	39
31,	------	------	.37	14	.38	15	------	------	.40	16	------	------	.51	26

aCreek Frozen.
*Interpolated.
Note.—January 1 to May 31, gage heights unreliable and not used.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WYALUSING CREEK, AT WYALUSING, BRADFORD COUNTY, PA.

1910. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	.68	47	2.20	692	10.84	11644	1.18	164	1.69	371	1.46	267	.61	27	.35	12	.25	6	.54	29	.43	19	1.08	134
2,	.61	37	1.40	242	8.84	8444	1.04	123	1.52	293	1.29	201	.66	44	.33	11	.27	8	.46	21	.28	8	1.06	129
3,	.76	60	1.70	376	6.84	5492	.98	107	1.48	276	1.18	164	.63	40	.29	8	.23	6	.46	21	.32	10	1.01	115
4,	.88	82	1.64	347	4.84	3162	.94	96	1.85	456	1.11	143	.58	34	.31	10	.97	104	.43	19	.44	20	.98	107
5,	.70	50	1.50	284	3.04	1402	1.05	126	1.47	271	1.03	120	.58	34	.28	8	1.15	155	.37	14	.39	15	.92	91
6,	.90	86	1.28	197	3.84	2161	1.04	123	1.32	212	1.49	280	.55	30	.30	9	1.07	132	.40	16	.58	34	.72	53
7,	2.45	887	1.21	173	6.24	4748	.94	96	1.20	170	1.29	201	.51	26	.27	8	1.07	132	.46	21	.60	36	.98	107
8,	2.02	564	1.30	204	3.84	2161	.89	84	1.12	146	1.15	155	.49	24	.29	8	1.01	115	.38	15	.67	46	1.01	115
9,	1.74	397	1.34	219	2.64	1040	.87	80	1.27	194	1.03	120	.49	24	.28	8	.97	104	.37	14	.66	44	.94	96
10,	1.85	456	1.38	234	2.14	649	.84	74	1.52	293	.99	109	.50	25	.29	8	.96	102	.39	15	.65	43	.96	102
11,	1.74	397	1.24	184	1.84	451	.86	78	1.23	180	1.19	167	.47	22	.33	11	.48	23	.37	14	1.54	302	1.01	115
12,	1.72	386	1.20	170	1.94	511	.84	74	1.12	146	1.73	392	.47	22	.50	25	.37	14	.39	15	1.36	227	.98	107
13,	1.60	328	1.35	223	1.84	451	.79	64	1.05	126	1.79	423	.48	23	.51	26	.31	10	.36	13	1.16	158	1.01	115
14,	1.59	324	1.39	238	2.04	578	.74	56	.99	109	1.48	276	.46	21	.41	17	.45	20	.30	9	1.07	132	.95	99
15,	1.52	293	1.36	227	1.24	184	.74	56	.92	91	1.31	208	.47	22	.38	15	.55	30	.37	14	1.09	137	.85	76
16,	1.52	293	1.31	208	1.38	234	.84	74	.89	84	1.19	167	.43	19	.38	15	.52	27	.34	12	1.06	129	.84	74
17,	1.52	293	1.47	271	1.54	302	.67	46	.86	78	1.70	376	.47	22	.36	13	.44	20	.33	11	1.02	118	.84	74
18,	1.64	347	1.56	310	1.59	324	.76	60	.80	60	1.41	246	.42	18	.36	13	.40	16	.32	10	.96	102	.96	102
19,	1.62	338	1.68	366	1.49	280	1.04	123	.89	84	2.13	642	.38	15	.40	16	.39	15	.35	12	.94	96	.96	102
20,	2.14	649	1.64	347	1.92	498	1.28	197	.79	64	1.54	302	.41	17	.47	22	.39	15	.35	12	.87	80	.98	107
21,	2.24	722	1.71	381	2.64	1046	1.27	194	.94	96	1.26	190	.42	18	.44	20	.39	15	.37	14	.86	78	.97	104
22,	a10.85	5700	3.10	1456	2.26	738	1.15	155	1.03	120	1.10	140	.33	11	.38	15	.37	14	.48	23	.83	72	.96	102
23,	6.87	5531	3.60	1926	2.14	649	1.05	126	.96	102	1.00	112	.38	15	.30	9	.37	14	.42	18	.77	61	1.02	118
24,	5.50	3880	3.01	1375	2.11	619	.99	109	.87	80	.96	102	.48	23	.32	10	.37	14	.37	14	.77	61	1.00	112
25,	4.50	2815	2.63	1038	2.14	649	3.58	1907	1.28	197	.82	70	.41	17	.36	13	.33	11	.47	22	.91	89	1.23	180
26,	3.70	2024	2.30	768	2.09	613	2.66	1064	3.71	2034	.75	58	.39	15	.36	13	.40	16	.37	14	1.40	242	1.47	271
27,	4.46	2775	2.34	799	1.74	397	1.99	544	2.45	887	.74	56	.40	16	.29	8	.87	80	.46	21	1.16	158	1.44	259
28,	2.53	953	6.64	5235	1.46	267	1.66	357	2.09	613	.82	70	.37	14	.28	8	.70	50	.45	20	1.01	115	1.37	231
29,	1.60	328			1.49	280	1.43	255	1.57	315	.81	68	.45	20	.29	8	.60	36	.32	10	1.02	118	1.37	231
30,	2.95	1321			1.25	187	2.44	879	1.50	284	.72	53	.38	15	.36	13	.59	35	.37	14	1.07	132	2.01	557
31,	2.97	1339			1.24	184			1.56	310			.41	17	.30	9			.37	14			*5:76	1366

aCreek frozen. Ice went out. Free flow gage height estimated at 7.00 feet.
*Reading taken at surface of ice jam; observer estimated water at 3.00.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WYALUSING CREEK, AT WYALUSING, BRADFORD COUNTY, PA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.45	------	5.13	------	4.86	------	1.77	412	1.28	197	.50	25	.50	25	.40	16	.64	42	1.12	146	1.48	276	1.10	140
2,	6.62	------	5.34	------	5.14	------	1.56	310	1.40	242	.63	40	.50	25	.31	10	.55	30	3.20	1550	1.29	201	1.09	137
3,	8.68	------	5.25	------	4.67	------	1.34	219	1.31	208	.60	36	.40	16	.31	10	.52	27	1.95	518	1.16	158	1.07	132
4,	7.15	------	5.32	------	4.24	------	1.51	288	1.20	170	.54	29	.38	15	.33	11	.46	21	1.56	310	1.09	137	1.00	112
5,	6.65	------	5.15	------	4.19	------	2.22	707	1.03	120	.51	26	.36	13	.32	10	.47	22	1.38	234	1.07	132	1.00	112
6,	6.68	------	5.03	------	4.32	------	3.10	1456	.93	94	.55	30	.37	14	.30	9	.53	28	1.18	164	.97	104	.85	76
7,	6.95	------	4.87	------	4.22	------	3.17	1522	.95	99	.60	36	.45	20	.37	14	.98	107	1.30	204	1.69	371	.90	86
8,	6.65	------	4.86	------	4.11	------	2.49	920	.88	82	.59	35	.42	18	.31	10	.85	76	1.42	250	1.38	234	1.04	123
9,	6.73	------	4.85	------	4.08	------	2.24	722	.84	74	.58	34	.31	10	.31	10	.90	86	1.19	167	1.23	180	.98	107
10,	6.31	------	4.85	------	4.47	------	2.30	768	.81	68	.50	25	.37	14	.30	9	1.62	338	1.10	140	1.18	164	1.15	155
11,	6.18	------	4.84	------	4.96	------	2.12	634	.80	66	.51	26	.69	49	.29	8	1.21	173	1.09	137	1.20	170	1.28	197
12,	6.17	------	4.55	------	4.37	------	1.87	468	.73	55	.54	29	.50	25	.28	8	1.00	112	1.56	310	1.13	149	1.15	155
13,	7.03	------	4.05	------	2.51	936	1.77	412	.72	53	2.00	550	.58	34	.30	9	.88	82	1.37	231	1.82	439	1.18	164
14,	8.03	------	3.65	------	2.34	799	1.64	347	.64	42	1.84	451	.54	29	.26	7	.77	61	1.18	164	1.28	197	1.50	284
15,	8.97	------	3.55	------	2.81	1195	2.94	1312	.74	56	1.34	219	.53	28	.22	5	.74	56	1.10	140	1.20	170	1.40	242
16,	6.79	------	3.53	------	2.32	784	2.24	722	.66	44	1.18	164	.40	16	.20	4	.70	50	1.04	123	1.22	177	2.50	928
17,	6.59	------	3.82	------	1.54	302	1.94	511	.67	46	1.07	132	.47	22	.19	4	.68	47	1.01	115	1.14	152	2.62	1029
18,	6.72	------	4.88	------	1.64	347	1.74	397	.72	53	.91	89	.65	43	.18	4	.65	43	1.09	137	1.17	161	2.09	613
18,	6.65	------	5.15	------	1.24	184	1.56	310	.70	50	.82	70	.70	50	.23	6	.62	39	2.15	656	1.65	352	1.80	428
20,	6.98	------	4.73	------	1.19	167	2.17	670	.70	50	.71	52	.62	39	.22	5	.59	35	1.82	439	1.40	242	1.55	306
21,	6.66	------	4.15	------	1.33	215	2.14	649	.59	35	.68	47	.58	34	.21	4	.59	35	1.64	347	1.38	234	1.33	215
22,	6.44	------	3.73	------	2.32	784	2.44	879	.61	37	.64	42	.58	34	.23	6	.55	30	1.72	386	1.34	219	1.41	246
23,	6.30	------	4.29	------	2.82	1204	2.56	978	.61	37	.61	37	.51	26	.21	4	.58	34	3.68	2004	1.32	212	3.05	1411
24,	6.18	------	3.67	------	1.76	407	2.17	670	.63	40	.78	63	.45	20	.24	6	.59	35	2.32	784	1.22	177	2.40	846
25,	6.11	------	3.60	------	1.32	212	1.86	462	.67	46	.65	43	.54	29	.30	9	.51	26	1.89	479	1.40	242	2.05	585
26,	6.05	------	4.25	------	1.82	439	1.64	347	.62	39	.60	36	.40	16	.33	11	.53	28	1.65	352	1.22	177	1.85	456
27,	6.00	------	5.17	------	3.24	1588	1.49	280	.55	30	.58	34	.47	22	.60	36	.65	43	1.50	284	1.17	161	2.05	585
28,	9.17	------	6.03	------	4.94	3269	1.33	215	.53	28	.60	36	.41	17	.43	19	.64	42	1.37	231	1.16	158	1.76	407
29,	6.45	------	------	------	2.51	936	1.25	187	.51	26	.57	33	.44	20	.80	66	.65	43	1.28	197	1.34	219	1.21	173
30,	6.09	------	------	------	2.72	1116	1.19	167	.53	28	.54	29	.34	12	1.04	123	1.65	352	1.18	164	1.22	177	1.26	190
31,	5.79	------	------	------	2.30	768	------	------	.50	25	------	------	.35	12	.75	58	------	------	1.14	152	------	------	1.29	201

Note:—Ice gorge below gage from January 1—March 12, inclusive, causing back water conditions. No estimate is made.

ESTIMATED MONTHLY DISCHARGE OF WYALUSING CREEK, AT WYALUSING, BRADFORD COUNTY, PA.

(Drainage Area 214 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1908.					
December,	70	27	44	0.21	0.242
a 1909.					
June,	1276	36	169	0.79	.881
July,	37	9	19	0.09	.104
August,	18	4	9	0.04	.046
September,	20	4	8	0.04	.045
October,	53	6	17	0.08	.092
November,	34	8	15	0.07	.078
December,	238	19	60	0.28	.323
1910.					
January	------------	37	1087	5.079	5.856
February,	5235	170	660	3.084	3.211
March,	11644	184	1625	7.593	8.754
April,	1907	46	250	1.168	1.303
May,	2034	64	282	1.318	1.520
June,	642	53	196	0.916	1.022
July,	44	11	23	0.107	0.123
August,	26	8	13	0.061	0.070
September,	155	6	45	0.210	0.234
October,	29	9	16	0.075	0.086
November,	302	8	96	0.449	0.501
December,	------------	53	179	0.836	0.964
The year,	------------	6	373	1.741	23.644
b 1911.					
April,	1522	167	598	2.79	3.113
May,	242	25	72	0.34	0.392
June,	550	25	83	0.39	0.435
July,	50	10	24	0.11	0.127
August,	123	4	16	0.07	0.081
September,	352	21	71	0.33	0.368
October,	2004	115	371	1.73	1.994
November,	439	104	205	0.96	1.071
December,	1411	76	350	1.64	1.891

a January 1—May 31, 1909, gage heights unreliable. No estimate made.
b Ice gorge below gage January 1—March 12 inclusive, causing back water. No estimates made.

LACKAWANNA RIVER.

DESCRIPTION OF BASIN.

Lackawanna river, one of the major tributaries of the North Branch of the Susquehanna river in northeastern Pennsylvania, drains an area of approximately 345 square miles in Susquehanna, Wayne, Lackawanna and Luzerne counties, on the west slope of the Delaware-Susquehanna divide. Rising in numerous lakes in two branches, one on either side of the central part of the Wayne-Susquehanna county line, which join a short distance below Union Dale, Susquehanna county, it follows a southerly course through Susquehanna and Wayne counties, and thence flows southwest through Lackawanna county to its mouth above Pittston, Luzerne county, a distance of approximately 50 miles. The upper section of this stream to Forest City, Susquehanna county, flows through a rolling, farming country, sparsely populated and largely deforested. From this point the valley widens to approximately 6 miles in width, bounded on one side by Bald Mountain, and on the other by Moosic Mountain, partly covered with second growth timber, the stream flowing through a thicky populated coal mining territory.

The stream is exceedingly rapid, falling from the junction of the two branches (elevation 1590) at Stillwater to Olyphant, a distance of 23 miles, at the rate of 36 feet per mile; from Olyphant through Scranton to Moosic, a distance of 12 miles, at the rate of 10 feet per mile; and from Moosic to its mouth (elevation 526), a distance of 4 miles, at the rate of 27 feet per mile. It lies entirely within the glacial area. There are many tributaries, the largest of which are Spring and Roaring Brooks. Scranton, the third largest city in Pennsylvania, and many boroughs, are located in this basin. On account of the presence of mine washings, the main stream is not used for water supply purposes, although its tributaries are most of them extensively employed. The dry weather flow is maintained above the natural flow of other streams in this section by the drainage of mine water into the stream.

The mean annual precipitation over this watershed is from 35 to 40 inches.

The discharge of this stream has been measured since July 1, 1908, at Scranton, about 8 miles above the mouth.

SUSQUEHANNA RIVER—STATION NO. 5.

LACKAWANNA RIVER AT SCRANTON.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania on July 1, 1908, at a single span, steel, through-truss, highway bridge at Carbon Street, Scranton, and was discontinued September 16, 1911.

Just above the bridge there is a sharp curve to the right while below the station the channel is nearly straight for 1,000 feet. The current passes under the bridge at a 25 degree angle to the right, and is practically normal under the water pipe bridge, except at high stages. Both banks are high and not subject to overflow; there being a good ashlar abutment on either side of the bridge. The bed of the stream is of mud and loose stones, together with a large amount of culm, and probably shifts considerably; while the waters of the river are polluted with mine wastes.

Discharge measurements are made from the downstream side of the Carbon Street bridge; the downstream girder of the water pipe bridge just below, and by wading at a section several hundred feet upstream. The initial point for soundings on the Carbon Street bridge is right end of downstream handrail; on the water pipe bridge, the initial point is right end of downstream girder.

A standard chain gage is attached to the Carbon Street bridge. The length of chain from the bottom of weight to center of marker is 20.90 feet. The elevation of zero is 676.577, Sandy Hook datum of D. L. & W. Railroad. Bench Mark No. 1 is on the spout of a fire plug on the south corner of Carbon Street and Love Road, elevation 691.987′. Bench Mark No. 2 is on a stone projection on top of eighth course from top under left hand downstream corner of Carbon Street bridge, elevation 682.801 feet.

This station is maintained in co-operation with the City Engineer's Office of Scranton, the gage being read twice daily by that office.

Since the establishment of this station, 16 discharge measurements have been made.

DISCHARGE MEASUREMENTS, LACKAWANNA RIVER, AT SCRANTON, LACKAWANNA COUNTY, PA.

(Drainage Area 175 Square Miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1908.							
1.	July 1,	Grant,	54	75	1.23	0.79	81	From Water Pipe Bridge.
2.	July 29,	do	53	69	1.25	0.75	78	From Water Pipe Bridge.
3.	Sept. 23,	do	55	56	0.99	0.55	56	From Carbon St. Bridge.
4.	Nov. 30,	do	40	55	1.40	1.03	77	Wading msmt above Carbon St. Bridge.
	1909.							
5.	Feb. 25,	Ryder,	96	414	4.33	4.81	1793	From Carbon St. Bridge.
6.	Feb. 27,	do	89	266	3.34	3.27	889	From Carbon St. Bridge.
7.	May 1,	Grant,	96	547	4.77	6.09	2614	From Carbon St. Bridge.
8.	May 1,	do	97	610	4.80	6.87	2926	From Carbon St. Bridge.
9.	May 2,	do.	96	500	4.39	5.72	2196	From Carbon St. Bridge.
10.	May 2,	do	96	489	4.30	5.56	2105	From Carbon St. Bridge.
11.	May 4,	do	96	389	3.70	4.72	1439	From Carbon St. Bridge.
12.	June 4,	Gannett & Grant,	70	105	1.39	1.44	146	From Carbon St. Bridge.
13.	June 23,	Grant,	70	116	1.38	1.59	159	From Carbon St. Bridge.
	1910.							
14.	April 20,	Langenheim,	85	188	2.38	2.39	447	From Carbon St. Bridge.
15.	April 22,	do	85	188	2.35	2.37	442	From Carbon St. Bridge.
	1912.							
16.	Jan. 24,	Boehringer,	72	89	1.30	1.76	115	From Carbon St. Bridge.

DISCHARGE TABLE FOR LACKAWANNA RIVER, AT SCRANTON, LACKAWANNA COUNTY, FROM JULY 1, 1908 TO SEPT 16th., 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.40	40	2.00	295	.60	1050	.10	1867	.60	2830
.50	44	.10	330	.70	1102	.20	1927	.70	2900
.60	50	.20	372	.80	1154	.30	1987	.80	2970
.70	56	.30	418	.90	1206	.40	2047	.90	3045
.80	64	.40	465	4.00	1258	.50	2107	7.00	3120
.90	72	.50	512	.10	1310	.60	2169	.10	3195
1.00	82	.60	560	.20	1362	.70	2232	.20	3270
.10	94	.70	608	.30	1416	.80	2295	.30	3345
.20	108	.80	656	.40	1470	.90	2358	.40	3420
.30	122	.90	704	.50	1524	6.00	2421	.50	3500
.40	138	3.00	752	.60	1578	.10	2486	.60	3580
.50	158	.10	800	.70	1632	.20	2552	.70	3660
.60	179	.20	848	.80	1687	.30	2620	.80	3745
.70	203	.30	896	.90	1747	.40	2690	.90	3830
.80	229	.40	946	5.00	1807	.50	2760	8.00	3915
.90	260	.50	998						

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LACKAWANNA RIVER, AT SCRANTON, LACKAWANNA COUNTY, PENNA.

1908.	JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	0.79	63	.78	62	.69	55	.70	56	a1.66	193	1.04	87
2,	a.78	62	.73	58	.68	55	.72	58	1.53	164	1.02	84
3,	a.77	62	.70	56	.68	55	.68	55	1.44	146	.98	80
4,	a.76	61	.69	55	.68	55	.67	54	1.42	142	.94	76
5,	a.76	61	.75	60	.68	55	.69	55	1.32	125	1.04	87
6,	.75	60	.72	58	.68	55	.67	54	1.21	109	a1.10	94
7,	.74	59	.92	74	.67	54	.67	54	1.09	93	1.18	105
8,	.80	64	.75	60	.67	54	.67	54	1.09	93	1.22	111
9,	.79	63	a.76	61	.68	55	.71	57	1.08	92	1.16	102
10,	.78	62	.73	58	.64	52	.69	55	1.04	87	1.15	101
11,	.77	62	.77	62	.67	54	.69	55	1.06	89	1.14	100
12,	a.77	62	.69	55	.67	54	.75	60	1.07	90	a1.19	107
13,	a.76	61	.69	55	.67	54	.73	58	1.04	87	a1.16	102
14,	a.75	60	.75	60	.71	57	.70	56	1.00	82	1.11	95
15,	a.74	59	.72	58	.68	55	.69	55	a.98	80	1.14	100
16,	a.73	58	a.77	62	.66	54	.67	54	.94	76	1.20	108
17,	a.72	58	.81	65	.71	57	.65	53	.91	73	1.19	107
18,	a.72	58	.74	59	.67	54	.65	53	1.04	87	1.26	116
19,	a.71	57	.67	54	.66	54	.61	51	1.12	97	1.26	116
20,	.71	57	.65	53	.67	54	.62	51	1.24	114	a1.20	108
21,	.72	58	.65	53	.69	55	.60	50	1.20	108	1.14	100
22,	.81	65	.74	59	.69	55	.62	51	a1.18	105	1.06	89
23,	.74	59	a.73	58	.67	54	.62	51	1.14	100	1.06	89
24,	.68	55	.73	58	.63	52	.68	52	1.09	93	1.06	89
25,	1.12	97	.71	57	.62	51	.68	55	1.05	88	1.08	92
26,	a.99	81	0.97	79	.62	51	1.10	94	1.02	84	1.05	88
27,	.86	69	a.88	70	.62	51	1.88	254	1.14	100	a1.05	88
28,	.83	66	a.79	63	.71	57	2.26	400	1.08	92	1.05	88
29,	.80	64	.69	55	1.42	142	2.26	400	a1.08	92	1.05	88
30,	.75	60	.69	55	.85	68	1.95	278	1.08	92	1.14	100
31,	.73	58	a.69	55	------	------	1.79	226	------	------	1.40	138

a Interpolated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LACKAWANNA RIVER, AT SCRANTON, LACKAWANNA COUNTY, PENNA.

1909.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.30	122	2.19	368	2.96	733	2.80	656	b6.50	2760	1.58	175	1.61	181	a0.94	76	.67	54	.62	51	.59	49	a.59	49
2,	1.25	115	2.07	320	2.60	560	2.78	640	a5.65	2200	1.52	162	1.54	166	.88	70	.69	55	.63	52	.57	48	a.58	49
3,	1.78	224	2.01	298	2.46	493	2.74	627	a4.70	1632	1.45	148	1.43	144	.80	64	.71	57	a.64	52	.57	48	a.57	48
4,	a2.72	618	2.01	298	2.42	473	a2.66	589	a3.75	1128	1.43	144	a1.38	135	.83	66	.69	55	.64	52	.62	51	a.56	48
5,	4.10	1310	1.94	274	2.31	423	2.54	551	a3.30	896	2.21	377	a1.33	127	.83	66	a.69	55	.60	50	.59	49	a.55	47
6,	5.18	1915	2.62	570	1.75	216	2.42	473	a3.00	752	a2.22	381	1.25	115	.82	66	.70	56	.61	51	.58	49	.54	46
7,	4.46	1502	a2.52	522	a1.79	226	2.63	574	2.93	718	1.91	264	1.23	112	.80	64	.67	54	.63	52	a.57	48	.57	48
8,	3.28	886	2.34	437	2.09	326	2.56	541	a2.95	728	1.79	226	1.21	109	a.80	64	.65	53	.60	50	.62	51	.56	48
9,	2.90	704	2.54	531	2.24	399	2.48	503	a2.98	742	1.67	196	1.14	100	.80	64	.66	54	.61	51	.59	49	.54	46
10,	a2.82	666	3.18	838	3.22	858	2.28	409	3.02	762	1.94	274	1.10	94	.80	64	.97	79	a.61	51	.61	51	.54	46
11,	2.72	618	2.89	699	4.12	1320	a2.24	390	3.20	848	1.90	260	a1.10	94	.78	62	.98	80	.61	51	.63	52	.52	45
12,	2.56	541	2.74	627	3.68	1092	2.16	355	2.92	714	1.74	213	1.09	93	.78	62	a.86	69	1.00	82	.62	51	a.52	45
13,	2.40	465	2.51	517	3.30	896	2.00	295	2.59	555	a1.82	235	1.06	89	.80	64	.87	70	.86	69	.62	51	1.18	105
14,	2.15	351	a2.00	560	a2.85	680	4.34	1438	2.49	507	1.90	260	1.05	88	.80	64	.85	68	.68	55	a.62	51	1.44	146
15,	1.80	229	2.72	618	2.48	503	5.28	1975	2.44	484	1.93	270	1.10	94	a.81	65	.83	66	.67	54	.62	51	1.26	116
16,	1.52	162	3.34	916	2.32	427	4.12	1320	a2.42	474	1.92	267	1.05	88	.82	66	.85	68	.68	55	.62	51	1.14	100
17,	a1.58	175	3.98	1248	2.16	355	3.32	906	2.39	460	1.86	248	1.14	100	.88	70	.82	66	a.68	55	.66	54	1.17	104
18,	1.64	189	3.42	956	2.06	316	a3.01	757	2.18	364	1.82	235	1.00	82	.90	72	.79	63	.69	55	.62	51	a1.08	92
19,	1.54	166	3.17	835	2.02	302	2.78	646	2.24	390	1.88	254	a1.11	95	.92	74	a.73	58	.61	51	.60	50	1.02	84
20,	1.51	160	6.75	2935	1.99	291	2.68	598	2.03	305	a1.76	219	1.02	84	.88	70	.67	54	.58	49	.59	49	.97	79
21,	1.62	184	a4.66	1610	a1.93	270	2.57	546	1.96	281	1.68	198	.97	79	.92	74	.69	55	.57	48	a.61	51	.96	78
22,	1.77	221	3.79	1149	1.84	241	a2.50	512	1.92	267	1.59	177	1.00	82	a.89	71	.67	54	.61	51	.62	51	.92	74
23,	1.98	288	5.19	1921	1.75	216	a2.40	465	a1.87	251	1.66	193	1.52	162	.84	67	.65	53	.74	59	.62	51	.91	73
24,	a2.74	627	5.34	2011	1.70	203	a2.35	442	1.81	232	1.72	208	1.36	132	.75	60	.82	66	a.79	63	.63	52	.91	73
25,	3.71	1107	4.52	1535	2.22	381	a2.30	418	1.75	216	1.92	267	a1.15	101	.75	60	.71	57	.76	61	.63	52	a.91	73
26,	3.76	1133	3.42	956	3.35	921	a2.25	395	1.69	201	2.50	512	1.04	87	.75	60	a.62	51	.73	58	.71	57	.88	70
27,	3.22	858	3.32	906	3.06	781	a2.20	372	1.73	211	a2.16	355	1.02	84	.74	59	.57	48	.67	54	.73	58	.86	69
28,	2.70	608	a3.16	830	a3.20	848	a2.20	372	1.82	235	1.97	285	1.00	82	.70	56	.63	52	.65	53	a.69	55	.86	69
29,	2.52	522	------	------	3.24	867	a2.15	351	1.77	211	1.82	235	.98	80	a.70	56	.69	55	.61	51	.66	54	.82	66
30	3.43	479	------	------	2.96	733	a2.10	330	a1.69	201	1.71	206	.97	79	.70	56	.68	55	.59	49	.61	51	.82	66
31,	a2.32	425	------	------	2.86	685	------	------	1.62	184	------	------	.99	81	.70	56	------	------	a.59	49	------	------	.78	62

a Interpolated.
b Maximum May 1, 7.02 at 7 P. M.—3135 sec. ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LACKAWANNA RIVER, AT SCRANTON, LACKAWANNA COUNTY, PENNA.

1910. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	*.78	62	2.28	409	8.23	4110	1.88	251	*2.55	536	1.90	260	1.48	154	0.60	50	0.60	50	0.69	55	0.57	48	1.13	105
2,	*.79	63	2.19	368	7.49	3492	1.86	248	2.24	390	1.74	213	1.36	132	0.59	49	0.57	48	*0.64	52	0.58	49	1.07	90
3,	.80	64	1.92	267	6.01	2427	*1.82	235	2.43	479	1.82	235	*1.31	124	0.61	51	0.84	67	0.58	49	0.58	49	1.01	83
4,	.76	61	1.71	200	5.47	2089	1.79	226	2.39	460	1.72	208	*1.26	116	0.61	51	*0.85	68	0.51	45	2.35	412	*0.96	78
5.	.75	60	1.60	179	4.51	1529	1.68	198	2.18	364	*1.93	270	1.21	109	0.71	57	0.87	70	0.48	43	3.10	800	0.91	73
6,	.74	59	*1.47	152	*6.00	2421	1.57	173	2.07	320	2.12	338	1.18	105	0.63	52	0.78	62	0.48	43	a2.96	733	0.93	75
7,	.80	64	1.38	135	7.02	3135	1.69	201	1.99	291	1.87	251	1.12	97	*0.65	53	0.83	66	0.62	51	2.82	666	0.93	75
8,	.71	57	1.39	136	5.00	1807	1.68	198	*1.98	288	1.73	211	1.14	100	0.66	54	0.71	57	0.69	55	2.78	646	0.89	71
9,	*.80	64	1.59	177	4.49	1519	1.62	183	2.09	326	1.64	189	1.08	92	0.66	54	0.66	54	*0.65	53	2.74	627	0.83	66
10,	.87	70	1.61	181	2.99	1253	*1.54	166	2.12	338	1.72	208	*1.08	92	0.75	60	0.58	49	0.62	51	2.67	594	0.73	58
11,	.81	67	1.31	124	3.50	998	1.44	146	1.94	274	1.81	241	1.08	92	0.95	81	*0.57	48	0.60	50	2.56	541	*0.72	58
12,	.87	70	1.19	127	3.51	1003	1.48	154	1.82	235	*1.94	274	1.00	82	0.83	66	0.57	48	0.56	48	2.24	390	0.70	56
13,	.99	81	*1.28	119	*3.51	1003	1.42	142	1.75	216	2.02	302	1.00	82	0.71	57	0.57	48	0.54	46	*1.95	278	0.65	53
14,	1.16	102	1.32	125	3.49	993	1.39	136	1.67	196	1.92	267	0.99	81	*0.71	57	0.61	51	0.54	46	*1.55	168	0.59	49
15,	1.12	96	1.24	115	*3.01	757	1.30	122	*1.61	181	1.88	254	0.98	80	0.71	57	0.57	48	0.57	48	*1.35	130	0.59	49
16,	*1.05	85	1.20	108	2.43	479	1.31	124	1.53	164	1.92	267	0.94	76	0.66	54	0.55	47	*0.57	48	*1.45	148	0.59	49
17,	.99	81	1.31	124	2.39	460	*1.41	140	1.43	144	2.08	323	*0.90	73	0.61	51	0.55	47	0.58	49	*1.25	115	0.57	48
18,	1.40	138	1.73	211	2.21	377	1.89	257	1.51	160	1.99	291	0.86	69	0.57	48	*0.56	48	0.60	50	*1.05	88	*0.58	49
19,	[illegible]	270	1.65	191	2.18	364	2.33	432	1.52	162	*2.33	432	0.81	65	0.82	66	0.57	48	0.56	48	*0.85	68	0.60	50
20,	1.52	162	*2.01	299	*3.11	805	2.31	423	1.41	140	2.66	589	0.78	62	0.68	55	0.57	48	0.56	48	*0.85	68	0.60	50
21,	2.75	632	2.73	622	2.97	738	2.40	465	1.53	164	2.06	316	0.80	64	*0.65	53	0.55	47	0.56	48	0.85	68	0.61	51
22,	6.34	2648	3.75	1128	2.94	723	2.17	359	*1.47	152	1.95	278	0.76	61	0.63	52	0.55	47	0.58	49	0.82	66	0.59	49
23,	*3.77	1138	2.90	704	2.65	584	2.14	347	1.42	142	1.78	224	0.76	61	0.58	49	0.54	46	*0.58	49	0.81	65	0.57	48
24,	3.30	926	2.57	546	2.61	565	*3.26	877	1.38	135	1.46	150	*0.75	60	0.58	49	0.59	49	0.57	48	0.78	62	0.57	48
25,	2.93	718	2.47	498	2.46	493	4.42	1481	2.48	503	1.29	121	0.73	58	0.62	51	*0.66	51	0.60	50	0.82	66	*0.58	49
26,	2.61	565	2.40	465	2.25	395	4.88	1735	2.99	747	*1.19	107	0.80	64	0.65	53	0.73	58	0.60	50	0.78	62	0.59	49
27,	2.45	488	*4.52	1535	*2.25	395	3.64	1071	2.77	642	1.17	104	0.78	62	0.62	51	0.87	70	0.56	48	*0.80	64	0.60	50
28,	2.33	432	7.00	3120	2.21	377	3.14	819	2.61	565	1.08	92	0.74	59	*0.60	50	0.83	66	0.55	47	0.81	65	0.93	75
29,	2.21	377	------	------	2.09	326	3.32	906	*2.38	456	1.95	278	6.68	55	0.57	18	0.75	60	0.56	48	1.14	109	1.47	152
30,	*2.30	418	------	------	1.94	274	3.20	848	*2.15	351	1.70	203	0.66	54	0.55	47	0.68	55	*0.57	48	1.52	162	1.57	173
31,	2.41	470	------	------	1.90	260	------	------	1.94	274	------	------	*0.63	52	0.57	48	------	------	0.58	49	------	------	1.38	135

*Interpolated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LACKAWANNA RIVER, AT SCRANTON, LACKAWANNA COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	*1.45	148	2.54	531	2.0	295	3.05	776	1.99	292	1.73	211	1.69	201	1.16	102	2.11	334
2,	1.52	162	2.53	526	1.86	248	*2.91	709	2.86	685	1.54	166	*1.69	201	1.16	102	1.83	238
3,	4.11	1315	2.54	531	1.9	260	2.77	642	2.81	661	1.54	166	1.69	201	1.34	128	*1.62	184
4,	5.48	2095	2.63	574	1.8	229	2.54	531	2.27	404	*1.51	160	1.63	186	1.24	114	1.42	142
5,	2.56	540	*2.62	570	*1.81	232	5.79	2289	2.19	368	1.48	154	1.37	133	1.24	114	1.58	175
6,	1.59	177	*2.6	560	1.82	235	5.01	1813	2.09	326	1.60	179	1.25	115	*1.22	111	1.52	162
7,	1.45	148	2.47	498	2.18	364	4.51	1529	*2.08	323	1.60	179	1.32	125	1.20	108	1.49	156
8,	1.40	138	2.21	377	2.16	355	4.13	1326	2.07	320	1.52	162	1.32	125	1.22	111	2.09	327
9,	1.30	122	1.95	278	2.16	355	*3.75	1128	1.93	270	1.49	156	*1.32	125	1.20	108	2.27	404
10,	1.24	114	1.77	221	2.02	302	3.37	931	1.86	248	1.44	146	1.31	124	1.15	101	*2.19	368
11,	1.16	102	1.66	193	1.80	248	3.25	872	1.82	235	*2.56	541	1.35	130	1.11	95	2.11	334
12,	1.02	84	*1.62	184	*2.04	309	2.89	699	1.77	221	3.59	1045	1.53	164	1.11	95	2.05	312
13,	1.51	160	1.57	173	2.22	381	2.71	613	1.77	221	3.14	819	1.41	140	*1.09	93	1.93	270
14,	2.89	699	1.57	173	2.18	503	3.04	771	*1.74	213	4.27	1400	1.35	130	1.07	90	1.81	232
15,	*2.94	723	1.63	186	2.68	598	4.07	1294	1.72	208	3.28	886	1.35	130	1.08	92	1.95	278
16,	2.98	742	1.63	186	2.63	574	*3.88	1196	1.71	206	2.84	675	*1.44	146	1.12	97	1.93	270
17,	2.78	646	1.96	281	2.48	503	3.69	1097	1.57	173	2.59	555	1.54	166	1.01	83	------	------
18,	2.56	541	2.13	343	2.36	446	2.99	747	1.85	244	*2.38	456	1.45	148	.95	77	------	------
19,	2.48	503	*2.1	330	*2.27	404	2.81	661	1.71	206	2.18	364	1.34	128	.97	79	------	------
20,	2.36	446	2.08	323	2.18	364	4.53	1540	1.73	211	2.10	330	1.33	127	*.98	80	------	------
21,	2.34	437	1.92	267	2.04	309	3.65	1076	*1.81	232	2.0	295	1.35	130	.98	80	------	------
22,	*2.22	381	1.69	201	2.1	330	3.74	1123	1.89	257	1.97	284	1.35	130	.96	78	------	------
23,	2.09	326	1.62	184	2.06	316	*3.60	1050	1.71	206	1.89	257	*1.34	128	.98	80	------	------
24,	2.03	306	1.59	177	2.1	330	3.47	982	1.61	181	2.0	295	1.32	125	.96	78	------	------
25,	2.0	295	1.79	226	1.96	281	3.29	891	1.75	216	*1.92	267	1.35	130	1.42	142	------	------
26,	1.95	278	*2.0	295	*2.72	618	3.08	790	1.65	191	1.84	241	1.25	115	1.4	138	------	------
27,	2.12	338	2.21	377	3.49	993	2.79	651	1.57	173	1.86	248	1.23	112	*1.36	132	------	------
28,	3.7	1102	2.06	316	5.24	1951	2.47	498	*1.52	162	1.93	270	1.19	107	1.31	124	------	------
29,	*3.22	858	------	------	3.64	1071	2.27	404	1.46	150	1.80	229	1.17	104	3.86	1185	------	------
30,	2.74	627	------	------	3.45	972	*2.13	343	*1.42	142	1.70	203	*1.16	102	2.26	400	------	------
31,	2.64	579	------	------	3.11	805	------	------	1.37	133	------	------	1.16	102	2.30	418	------	------

*Interpolated.

ESTIMATED MONTHLY DISCHARGE OF LACKAWANNA RIVER AT SCRANTON, LACKAWANNA COUNTY, PA.

(Drainage Area 175 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1908.					
July,	97	55	63	0.360	0.415
August,	79	53	60	0.343	0.396
September,	142	51	58	0.329	0.367
October,	400	50	97	0.554	0.639
November,	193	73	102	0.583	0.650
December,	138	76	98	0.560	0.646
1909.					
January,	1915	115	567	3.240	3.735
February,	2935	274	903	5.160	5.373
March,	1320	203	549	3.137	3.617
April,	1975	295	615	3.514	3.920
May,	3135	184	643	3.674	4.235
June,	512	144	248	1.417	1.581
July,	181	79	104	0.594	0.685
August,	76	56	65	0.371	0.428
September,	80	48	59	0.337	0.376
October,	82	48	54	0.308	0.355
November,	58	48	51	0.291	0.325
December,	146	45	70	0.400	0.461
The year,	3135	45	327	1.870	25.091
1910.					
January,	2648	57	342	1.954	2.256
February,	3120	107	441	2.520	2.624
March,	4110	260	1166	6.663	7.682
April,	1735	122	436	2.491	2.779
May,	747	135	316	1.806	2.082
June,	589	92	250	1.429	1.594
July,	154	52	82	0.469	0.541
August,	81	47	54	0.309	0.356
September,	70	46	54	0.300	0.345
October,	55	43	49	0.280	0.323
November,	800	48	248	1.417	1.581
December,	173	48	70	0.400	0.461
The year,	4110	43	292	1.670	21.621
1911.					
January,	2095	84	488	2.79	3.217
February,	574	173	324	1.85	1.926
March,	1951	229	490	2.80	3.228
April,	2289	343	966	5.52	6.159
May,	685	133	261	1.49	1.718
June,	1400	146	378	2.16	2.410
July,	201	102	136	0.78	0.899
August,	1185	77	156	0.89	1.020

Note:—Station discontinued September 16, 1911.

SUSQUEHANNA BASIN—STATION NO. 6.

NORTH BRANCH SUSQUEHANNA RIVER AT WILKES-BARRE.

DESCRIPTION OF STATION.

This station was established by the United States Geological Survey, in co-operation with the United States Weather Bureau, on March 30, 1899, at the Market Street Bridge, Wilkes-Barre.

The channel is straight for one-fourth mile above and below the station. The left bank is high and above ordinary floods, while the right bank is low and overflows at approximately 20 feet gage height. The bed consists of sand and gravel, and is somewhat shifting.

Discharge measurements are taken from the upstream side of the bridge, which has a total span of 700 feet between abutments. The initial point for soundings is east end of upstream handrail.

In 1888 readings were commenced by the U. S. Weather Bureau on a staff gage attached to the easternmost pier. During low stages of the river, however, the water receded from the pier, and, therefore, on March 30, 1899, a standard chain gage superceded the staff. The datum of the chain gage was 4 feet below the zero of the staff gage, thus eliminating the minus readings of the gage. Soon after the installation of the chain gage by the Geological Survey, the Weather Bureau adopted the same, taking readings once daily. The standard length of chain from bottom of weight to center of marker was 40.68′ Bench mark No. 1 is extreme west end of stone door-sill of north entrance to Coal Exchange Building, elevation 32.99 ft. above zero of gage. Bench Mark No. 2 is top of rail in front of Lehigh Valley Depot, elevation 39.70 feet above gage datum, and 545 ft. above mean sea level. Bench mark No. 3 is top of stone monument at Northampton and River Streets, elevation 30.70 feet above zero of gage and 536 ft. above mean sea level. The elevation of zero of gage is 505.3 above mean sea level.

On July 20, 1910, the U. S. Weather Bureau installed a Mott gage to replace the chain gage, referred to the datum of the previous gage, or Bench mark No. 3, the standard length of tape being 40.67′ which gage has been operated since that date.

On account of inaccuracy of gage heights from 1888 to 1899, due to a confusion in the elevation of the gage datum, no data has been published for this period.

Since the establishment of this station, 34 discharge measurements have been made.

Gaging Station on North Branch of Susquehanna River, at Wilkes-Barre.

DISCHARGE MEASUREMENTS OF NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY, PENNA.

(Drainage Area 9,995 Square Miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Discharge.	Gage height.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1899.							
1.	Mar. 30,	Paul,	------	6,846	3.62	9.00	24.800	
2.	June 6,	do	------	3,064	1.20	4.30	3,668	
3.	July 26,	do	------	1,223	1.57	2.80	1,924	Wading measurement at Retreat.
4.	July 27,	do	------	1,508	0.90	2.80	1,357	
5.	Sept. 17,	do	------	2.193	0.38	2.30	851	
6.	Sept. 18,	do	------	1,115	0.98	2.30	1,096	Wading measurement at Retreat.
7.	Oct. 16,	do	------	1,054	1.06	2.35	1,114	
	1900.							
8.	May 20,	Paul,	------	3,599	1.88	5.60	6,772	
9.	Sept. 26,	do	------	1,023	0.93	2.20	961	Wading measurement at Retreat.
	1901.							
10.	Aug. 20,	Paul,	------	3,154	0.69	3.10	2,170	
	1902.							
11.	Sept. 20,	Paul,	------	3,154	0.69	3.10	2,170	
	1903.							
12.	Mar. 4,	Murphy,	------	9,996	4.61	13.50	46,112	
13.	April 8,	do	------	6,920	3.37	8.86	23,247	
14.	Aug. 4,	Hoyt,	------	3,489	1.35	4.00	4,718	
15.	Oct. 10,	Sawyer,	------	13,163	6.57	19.00	86,500	
	1904.							
16.	July 20,	Grover,	------	3,864	1.13	4.05	4,38[illegible]	
17.	July 21,	do	------	4,077	1.15	4.20	4.680	Measured at Pittston.
18.	Sept. 15,	Hoyt,	------	3,670	0.96	3.70	3,540	
19.	Oct. 1,	do	------	4,220	1.44	4.75	6,090	
20.	Nov. 5,	Comstock,	------	4,218	1.47	4.61	6,189	
21.	Nov. 7,	do.	------	4,057	1.39	4.49	5,660	
	1905.							
22.	Mar. 22,	Hoyt,	669	16,150	5.85	19.2	94,400	Ice float measurement above bridge.
23.	Mar. 22,	do	669	16,150	6.27	19.2	101,200	Ice float measurement above bridge.
24.	Mar. 23,	do	666	12.900	5.84	17.85	75,110	
25.	Mar. 24,	do	666	12.340	5.90	17.08	72,800	
26.	Mar. 25,	do	666	14,710	7.21	20.6	106,100	
27.	Mar. 28,	Comstock,	648	15,130	7.16	21.3	108,400	
28.	Mar. 29,	Harley.	660	14.290	6.84	19.97	97,680	
	1906.							
29.	July 2,	U. S. G. S.,	------	4,800	1.96	5.51	9,400	
	1907.							
30.	Oct. 16,	Grant,	591	5,020	2.23	5.99	11,200	
	1908.							
31.	Oct. 29,	do	400	2,995	0.55	2.66	1,657	
	1909.							
32.	May 3,	do	802	13,884	7.20	20.69	100,235	
33.	May 4,	do	662	11,571	5.11	15.58	59,171	
	1912.							
34.	May 21,	Reckord & Boehringer,	636	6.088	2.96	7.39	180,045	Surface msmt.

DISCHARGE TABLE FOR NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY, FROM MARCH 30, 1899 TO DECEMBER 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	**Sec.-ft.**	**Feet.**	**Sec.-ft.**	**Feet.**	**Sec.-ft.**	**Feet.**	**Sec.-ft.**	**Feet.**	**Sec.-ft.**
1.90	820	.30	12520	.70	32460	.10	56260	.50	91070
2.00	845	.40	12930	.80	32940	.20	56920	.60	91990
.10	895	.50	13345	.90	33420	30	57590	.70	92910
.20	970	.60	13760	11.00	33900	.40	58260	.80	93830
.30	1055	.70	14180	.10	34380	.50	58940	.90	94760
.40	1155	.80	14600	.20	34860	.60	59620	20.00	95700
50	1270	.90	15025	.30	35340	.70	60310	.10	96660
.60	1395	7.00	15450	.40	35820	.80	61000	.20	97690
.70	1530	.10	15875	.50	36300	.90	61700	.30	98780
.80	1680	.20	16305	.60	36780	16.00	62400	.40	99920
.90	1840	.30	16735	.70	37260	.10	63120	.50	101110
3.00	2005	.40	17170	.80	37740	.20	63850	.60	102300
.10	2185	.50	17605	.90	38220	.30	64590	.70	103540
.20	2380	.60	18040	12.00	38700	.40	65340	.80	104830
.30	2590	.70	18475	.10	39180	.50	66100	.90	106180
.40	2810	.80	18915	.20	39660	.60	66860	21.00	107600
.50	3035	.90	19355	.30	40150	.70	67630	.10	109030
.60	3265	8.00	19800	.40	40640	.80	68410	.20	110480
.70	3500	.10	20250	.50	41140	.90	69200	.30	111950
.80	3750	.20	20700	.60	41640	17.00	70000	.40	113440
.90	4000	.30	21155	.70	42150	.10	70800	.50	114950
4.00	4250	.40	21615	.80	42660	.20	71600	.60	116460
.10	4510	.50	22075	.90	43180	.30	72400	.70	117990
.20	4780	.60	22535	13.00	43700	.40	73200	.80	119540
.30	5070	.70	22995	.10	44230	.50	74000	.90	121110
.40	5380	.80	23460	.20	44770	.60	74800	22.00	122700
.50	5710	.90	23930	.30	45310	.70	75600	.10	124280
.60	6050	9.00	24400	.40	45860	.80	76400	.20	125860
.70	6400	.10	24870	.50	46420	.90	77200	.30	127440
.80	6750	.20	25340	.60	46980	18.00	78000	.40	129020
.90	7100	.30	25810	.70	47550	.10	78810	.50	130600
5.00	7450	.40	26280	.80	48130	.20	79630	.60	132180
.10	7800	.50	26750	.90	48710	.30	80460	.70	133760
.20	8160	.60	27220	14.00	49300	.40	81300	.80	135340
.30	8540	.70	27690	.10	49900	.50	82150	.90	136920
.40	8930	.80	28160	.20	50500	.60	83000	23.00	138500
.50	9320	.90	28630	.30	51100	.70	83860	24.00	154250
.60	9710	10.00	29100	.40	51730	.80	84730	25.00	170000
.70	10100	.10	29580	.50	52360	.90	85610	26.00	186000
.80	10500	.20	30060	.60	52990	19.00	86500	27.00	201500
.90	10900	.30	30540	.70	53630	.10	87400	28.00	217300
6.00	11300	.40	31020	.80	54280	.20	88310	29.00	233000
.10	11705	.50	31500	.90	54940	.30	89230	.50	240850
.20	12110	.60	31980	15.00	55600	.40	90150	30.00	248700

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY, PA.

1899. Day.	MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	-----	-----	8.40	21615	6.40	12930	4.50	5710	3.60	3265	2.70	1530	3.10	2185	2.50	1270	2.50	1270	3.40	2810
2,	-----	-----	8.10	20250	6.20	12110	5.50	9320	3.30	2590	2.60	1395	2.90	1840	2.50	1270	3.00	2005	3.40	2810
3,	-----	-----	7.70	18475	6.30	12520	5.30	8540	3.30	2590	2.70	1530	2.60	1395	2.50	1270	8.30	21155	3.40	2810
4,	-----	-----	7.20	16305	6.30	12520	5.10	7800	3.20	2380	2.60	1395	2.60	1395	2.50	1270	6.70	14180	3.40	2810
5,	-----	-----	6.90	15025	6.40	12930	4.60	6050	3.00	2005	3.20	2380	2.50	1270	2.50	1270	7.30	16735	3.50	3035
6,	-----	-----	6.90	15025	6.10	11705	4.30	5070	3.00	2005	3.00	2005	2.50	1270	2.60	1395	6.60	13760	3.50	3035
7,	-----	-----	7.40	17170	5.70	10100	3.60	3265	2.80	1680	2.80	1680	2.50	1270	2.60	1395	6.90	15025	3.50	3035
8,	-----	-----	10.35	30780	5.60	9710	3.50	3035	2.90	1840	2.50	1270	2.40	1155	2.50	1270	5.30	8540	3.70	3500
9,	-----	-----	14.10	49900	5.40	8930	3.50	3035	2.80	1680	2.50	1270	2.40	1155	2.50	1270	5.00	7450	3.60	3265
10,	-----	-----	14.20	50500	5.30	8540	3.50	3035	2.80	1680	2.50	1270	2.40	1155	2.50	1270	4.50	5710	3.50	3035
11,	-----	-----	12.80	42660	5.10	7800	3.30	2590	2.80	1680	2.50	1270	2.40	1155	2.50	1270	4.20	4780	3.50	3035
12,	-----	-----	11.10	34380	5.20	8160	3.20	2380	2.90	1840	2.50	1270	2.50	1270	2.50	1270	4.30	5070	3.60	3265
13,	-----	-----	11.30	35340	5.10	7800	3.20	2380	2.90	1840	2.70	1530	2.50	1270	2.40	1155	4.90	7100	7.70	18475
14,	-----	-----	14.00	49300	5.00	7450	3.20	2380	3.00	2005	2.80	1680	2.50	1270	2.40	1155	4.70	6400	9.60	27220
15,	-----	-----	14.30	51100	5.00	7450	3.00	2005	3.20	2380	2.80	1680	2.40	1155	2.40	1155	4.60	6050	9.60	27220
16,	-----	-----	13.90	48710	4.80	6750	3.10	2185	3.30	2590	2.80	1680	2.40	1155	2.40	1155	4.50	5710	8.50	22075
17,	-----	-----	13.40	45860	4.80	6750	3.20	2380	3.10	2185	2.90	1840	2.30	1055	2.30	1055	5.20	8160	7.70	18475
18,	-----	-----	12.50	41140	4.70	6400	3.20	2380	3.00	2005	2.70	1530	2.30	1055	2.30	1055	5.20	8160	7.30	16735
19,	-----	-----	11.30	35340	4.90	7100	3.00	2005	3.00	2005	2.40	1155	2.30	1055	2.30	1055	5.30	8540	6.50	13345
20,	-----	-----	10.50	31500	4.90	7100	3.00	2005	3.00	2005	2.30	1055	2.30	1055	2.30	1055	5.00	7450	6.50	13345
21,	-----	-----	9.90	28630	5.40	8930	3.10	2185	3.10	2185	2.30	1055	2.30	1055	2.30	1055	4.70	6400	8.30	21155
22,	-----	-----	9.40	26280	5.90	10900	3.00	2005	3.00	2005	2.60	1395	2.30	1055	2.30	1055	4.60	6050	8.40	21615
23,	-----	-----	9.00	24400	5.80	10500	3.00	2005	3.00	2005	2.50	1270	2.30	1055	2.30	1055	4.30	5070	7.40	17170
24,	-----	-----	8.50	22075	5.70	10100	2.90	1840	2.90	1840	2.50	1270	2.30	1055	2.30	1055	4.20	4780	6.60	13760
25,	-----	-----	8.00	19800	5.50	9320	2.90	1840	2.80	1680	2.40	1155	2.20	970	2.30	1055	4.00	4250	8.40	21615
26,	-----	-----	7.40	17170	5.40	8930	3.10	2185	2.80	1680	2.40	1155	2.50	1270	2.20	970	3.80	3750	8.00	19800
27,	-----	-----	7.60	18040	5.10	7800	3.10	2185	2.80	1680	2.40	1155	2.40	1155	2.30	1055	3.80	3750	7.40	17170
28,	-----	-----	7.40	17170	4.90	7100	3.30	2590	2.80	1680	2.40	1155	2.50	1270	2.30	1055	3.70	3500	6.30	12520
29,	-----	-----	7.10	15875	4.80	6750	3.80	3750	2.80	1680	4.60	6050	2.50	1270	2.50	1270	3.60	3265	9.10	24870
30,	9.00	24400	6.60	13760	4.80	6750	4.00	4250	2.60	1395	4.10	4510	2.60	1395	2.50	1270	3.50	3035	7.90	19355
31,	8.70	22995	-----	-----	4.70	6400	-----	-----	2.60	1395	3.40	2810	-----	-----	2.50	1270	-----	-----	7.70	18475

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY, PA.

1900.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.80	14600	7.40	17170	10.40	31020	6.90	15025	6.10	11705	3.80	3750	3.00	2005	3.20	2380	3.10	2185	2.30	1055	2.70	1530	10.50	31500
2,	6.20	12110	6.80	14600	17.73	76000	7.50	17605	5.80	10500	3.70	3500	2.80	1680	3.20	2380	3.00	2005	2.30	1055	2.60	1395	9.20	25340
3,	6.40	12930	6.30	12520	14.55	52675	9.80	28160	5.50	9320	4.20	4780	2.70	1530	3.00	2005	3.10	2185	2.30	1055	2.60	1395	8.10	20250
4,	6.80	14600	6.50	13345	11.80	37740	11.40	35820	5.30	8540	3.90	4000	2.90	1810	2.90	1840	3.00	2005	2.30	1055	2.50	1270	7.40	17170
5,	7.00	15450	8.40	21615	9.90	28630	11.10	34380	5.20	8160	3.70	3500	2.90	1810	2.90	1840	2.90	1840	2.30	1055	2.70	1530	9.20	25340
6,	7.00	15450	8.50	22075	8.40	21615	9.40	26280	5.00	7450	3.80	3750	3.40	2810	2.90	1840	2.80	1680	2.20	970	2.80	1680	11.90	38220
7,	6.90	15025	7.90	19355	8.20	20700	9.60	27220	4.80	6750	3.70	3500	3.90	4000	2.90	1840	2.70	1530	2.10	895	3.00	2005	11.30	35340
8,	6.80	14600	7.80	18915	8.10	20250	11.70	37260	4.70	6400	3.60	3265	3.60	3265	2.90	1840	2.70	1530	2.10	895	2.90	1840	9.90	28630
9,	6.50	13345	14.45	52045	7.70	18475	12.20	39660	4.60	6050	3.60	3265	3.40	2810	2.90	1840	2.60	1395	2.20	970	2.90	1840	8.90	23930
10,	6.10	11705	9.20	25340	8.40	21615	10.90	33420	4.50	5710	3.80	3750	3.20	2380	2.80	1680	2.60	1395	2.20	970	2.90	1840	8.20	20700
11,	5.80	10500	9.80	28160	9.00	24400	9.20	25340	4.50	5710	3.90	4000	3.10	2185	2.80	1680	2.70	1530	2.20	970	3.00	2005	7.50	17605
12,	5.90	10900	9.20	25340	7.80	18915	7.90	19355	4.80	6750	4.30	5070	2.90	1810	2.70	1530	2.70	1530	2.20	970	3.10	2185	6.60	13760
13,	5.60	9710	9.20	25340	6.80	14600	7.30	16735	4.90	7100	4.30	5070	3.00	2005	2.70	1530	2.70	1530	2.20	970	3.30	2590	6.20	12110
14,	5.90	10900	12.10	39180	6.30	12520	7.70	18475	4.80	6750	4.80	6750	3.00	2005	2.60	1395	2.50	1270	2.20	970	3.50	3035	6.10	11705
15,	5.60	9710	13.65	47265	5.70	10100	8.10	20250	4.70	6400	4.30	5070	3.00	2005	2.60	1395	2.40	1155	2.20	970	3.50	3035	a10.30	30540
16,	5.50	9320	11.80	37740	5.70	10100	7.80	18915	4.70	6400	4.00	4250	3.00	2005	2.60	1395	2.50	1270	2.30	1055	3.40	2810	9.80	28160
17,	5.50	9320	9.20	25340	9.00	24400	7.60	18040	4.90	7100	3.80	3750	2.90	1840	2.50	1270	2.40	1155	2.40	1155	3.30	2590	9.20	25340
18,	5.20	8160	7.70	18475	8.10	20250	10.03	29240	5.00	7450	3.60	3265	2.90	1840	2.50	1270	2.30	1055	2.40	1155	3.20	2380	8.70	22995
19,	5.10	7800	8.90	23930	8.30	21155	12.45	40890	5.10	7800	3.50	3035	2.80	1680	2.40	1155	2.20	970	2.50	1270	3.20	2380	9.20	25340
20,	5.80	10500	10 70	32460	8.50	22075	12.40	40640	5.60	9710	3.40	2810	3.10	2185	2.50	1270	2.20	970	2.70	1530	3.10	2185	9.60	27220
21,	14.65	53310	9.80	28160	10.85	33180	11.10	34380	5.20	8160	3.30	2590	3.20	2380	2.50	1270	2.10	895	2.60	1395	3.10	2185	9.40	26280
22,	16.85	68805	11.40	35820	9.70	27690	10.00	29100	5.00	7450	3.20	2380	3.10	2185	2.50	1270	2.20	970	2.60	1395	3.20	2380	9.00	24400
23,	13.50	46420	16.10	63120	9.20	25340	9.50	26750	4.80	6750	3.50	3035	3.00	2005	2.80	1680	2.20	970	2.70	1530	3.60	3265	8.80	23460
24,	10.30	30540	14.75	53955	8.40	21615	11.30	35340	4.60	6050	3.30	2590	2.90	1840	3.00	2005	2.20	970	2.90	1840	4.00	4250	9.20	25340
25,	8.50	22075	11.00	33900	9.90	28630	10.70	32640	4.50	5710	3.30	2590	2.90	1840	2.90	1840	2.20	970	2.80	1680	4.30	5070	8.80	23460
26,	7.80	18915	8.80	23460	8.70	22995	9.50	26750	4.30	5070	3.20	2380	4.00	4250	2.60	1395	2.20	970	2.80	1680	4.70	6400	12.80	42660
27,	7.90	19355	7.00	15450	8.10	20250	8.40	21615	4.10	4510	3.20	2380	3.70	3500	2.70	1530	2.30	1055	2.70	1530	16.75	68020	14.20	50500
28,	6.20	12110	8.50	22075	7.10	15875	7.50	17605	4.00	4250	3.10	2185	3.40	2810	2.80	1680	2.20	970	2.70	1530	20.75	104185	12.90	43180
29,	9.20	25340	-----	------	7.00	15450	6.90	15025	3.90	4000	3.10	2185	3.20	2380	2.80	1680	2.20	970	2.70	1530	14.65	53310	12.40	40640
30,	9.00	24400	-----	------	6.80	14600	6.50	13345	3.80	3750	3.10	2185	3.20	2380	3.10	2185	------	------	2.70	1395	------	------	11.40	35820
31,	8.70	22995	-----	------	6.50	13345	------	------	3.70	3500	------	------	3.30	2590	3.10	2185	2.30	1055	2.60	35820	11.40	37740	11.80	1530

a Ice backed water at gage.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY, PA.

1901	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	10.60	31980	8.60	22535	6.20	12110	9.70	27690	7.80	18915	14.55	52675	4.50	5710	3.40	2810	5.80	10500	3.90	4000	3.20	2380	7.30	16735
2,	10.60	31980	8.40	21615	6.10	11705	8.80	23460	7.20	16305	11.70	37260	4.00	4250	3.20	2380	5.60	9710	3.70	3500	3.20	2380	6.70	14180
3,	9.50	26750	8.30	21155	6.10	11705	8.30	21155	8.70	22995	11.00	33900	3.50	3035	3.00	2005	5.70	10100	4.00	4250	3.10	2185	6.80	14600
4,	8.70	22995	8.40	21615	6.10	11705	9.30	25810	8.90	23930	10.60	31980	3.60	3265	3.00	2005	5.30	8540	4.30	5070	3.10	2185	a9.30	25810
5,	8.50	22075	8.00	19800	6.20	12110	10.80	32940	8.10	20250	9.20	25340	3.60	3265	3.00	2005	5.00	7450	4.00	4250	3.00	2005	9.90	28630
6,	7.20	16305	7.80	18915	6.00	11300	11.90	38220	7.50	17605	8.10	20250	3.60	3265	3.00	2005	4.50	5710	3.90	4000	3.00	2005	9.40	26280
7,	7.10	15875	7.80	18915	5.90	10900	16.20	63850	6.80	14600	8.10	20250	4.30	5070	3.00	2005	4.20	4780	3.70	3500	3.00	2005	9.00	24400
8,	7.00	15450	7.70	18475	5.80	10500	18.05	78405	6.30	12520	9.00	24400	4.00	4250	3.30	2590	3.80	3750	3.60	3265	3.00	2005	8.30	21155
9,	7.90	19355	7.70	18475	5.70	10100	16.90	60200	5.90	10900	9.30	25810	4.00	4250	3.20	2380	3.70	3500	3.40	2810	3.00	2005	8.70	22995
10,	7.90	19355	7.50	17605	6.50	13345	14.70	53630	5.80	10500	8.90	23930	3.90	4000	3.10	2185	3.50	3035	3.30	2590	3.00	2005	11.70	37260
11,	7.80	18915	7.60	18040	8.40	21615	13.20	44770	6.40	12930	8.00	19800	3.80	3750	3.20	2380	3.30	2590	3.20	2380	2.90	1840	12.10	39180
12,	7.80	18915	7.60	18040	18.80	84730	11.80	37740	7.80	18915	7.20	16305	3.80	3750	3.30	2590	3.30	2590	3.20	2380	3.00	2005	11.70	37260
13,	8.10	20250	7.40	17170	12.20	39660	10.70	32460	9.50	26750	6.50	13345	3.60	3265	3.10	2185	3.30	2590	3.30	2590	3.00	2005	10.10	29580
14,	9.00	24400	6.90	15025	9.70	27690	10.10	29580	9.80	28160	6.10	11705	3.50	3035	3.10	2185	3.30	2590	3.50	3035	3.50	3035	8.80	23460
15,	12.00	38700	7.00	15450	8.90	23930	9.60	27220	9.10	24870	5.90	10900	3.40	2810	3.20	2380	3.20	2380	4.10	4510	4.00	4250	20.40	99920
16,	14.50	52360	7.10	15875	9.10	24870	9.30	25810	8.00	19800	5.70	10100	3.20	2380	3.60	3265	3.30	2590	4.30	5070	4.70	6400	26.75	197500
17,	14.00	49300	7.30	16735	8.80	23400	8.90	23930	7.10	15875	5.50	9320	3.20	2380	3.70	3500	3.50	3035	4.40	5380	4.50	5710	22.80	137340
18,	13.60	46980	7.30	16735	8.30	21155	8.50	22075	6.70	14180	5.30	8540	3.60	3265	8.15	20475	3.80	3750	4.30	5070	4.20	4780	15.60	59620
19,	12.50	41140	7.20	16305	8.00	19800	8.10	20250	6.80	14600	4.90	7100	3.40	2810	5.60	9710	4.00	4250	4.20	4780	4.10	4510	11.00	33900
20,	11.50	36300	6.90	15025	10.10	29580	7.90	19355	7.00	15450	4.70	6400	3.30	2590	4.80	6750	4.20	4780	4.00	4250	4.00	4250	8.20	20700
21,	9.40	26280	6.90	15025	12.15	39420	11.05	34140	7.10	15875	4.60	6050	3.10	2185	4.60	6050	4.10	4510	3.90	4000	4.00	4250	7.80	18915
22,	10.50	31500	6.70	14180	14.80	54280	18.10	78810	6.50	13345	4.40	5380	3.00	2005	6.05	15235	3.90	4000	3.80	3750	3.90	4000	9.50	*14000
23,	11.00	33900	6.80	14600	14.50	52360	17.10	70800	6.40	12930	4.50	5710	3.10	2185	6.90	17025	3.70	3500	3.70	3500	3.80	3750	11.20	*14000
24,	11.00	33900	6.40	12930	12.90	43180	14.80	54280	7.90	19355	5.60	9710	3.10	2185	6.50	13345	3.50	3035	3.70	3500	3.80	3750	11.70	*14000
25,	11.70	37260	6.40	12930	12.90	43180	14.70	53630	9.00	24400	5.70	10100	3.00	2005	10.50	31500	3.40	2810	3.60	3265	6.00	11300	13.70	*14000
26,	11.00	33900	6.30	12520	13.80	48130	13.60	46980	8.30	21155	5.70	10100	3.00	2005	9.20	25340	3.90	2380	3.40	2810	9.10	24870	13.50	*14000
27,	10.50	31500	6.20	12110	17.15	71200	12.30	40150	7.60	18040	5.00	7450	2.90	1840	7.10	15875	3.20	2380	3.40	2810	7.60	18040	13.30	*14000
28,	10.00	29100	6.30	12520	21.40	113440	11.00	33900	7.40	17170	4.20	4780	2.90	1840	6.10	11705	3.10	2185	3.40	2810	6.20	12110	12.80	*14000
29,	9.50	26750	-----	-----	19.45	90610	9.60	27220	10.60	31980	4.50	5710	3.00	2005	5.30	8540	3.30	2590	3.20	2380	5.50	9320	13.10	*14000
30,	9.30	25810	-----	-----	15.50	58940	8.60	22535	16.85	68805	4.20	4780	3.30	2590	4.80	6750	3.80	3750	3.10	2185	5.70	10100	13.10	*14000
31,	9.10	24870	-----	-----	12.90	43180	-----	-----	17.55	74400	-----	-----	3.60	3265	4.90	7100	---	---	3.10	2185	---	---	13.50	*14000

a River frozen over.
* Average discharge.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY, PA.

1902.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	14.00	49300	12.70	42150	29.57	241950	9.70	27690	5.00	7450	4.10	4510	10.60	31980	8.80	23460	3.60	3265	9.60	27220	9.50	26750	5.10	7800
2,	13.00	43700	11.40	35820	30.75	266475	9.20	25340	4.90	7100	4.00	4250	10.50	31500	9.50	26750	3.50	3035	10.80	32940	8.20	20700	5.00	7450
3,	12.10	39180	10.80	32940	30.05	249585	9.00	24400	5.10	7800	3.90	4000	8.30	21155	11.10	34380	3.40	2810	10.60	31980	7.40	17170	5.00	7450
4,	10.90	33420	10.70	32460	25.25	174000	8.50	22075	5.10	7800	3.90	4000	7.80	18915	9.60	27220	3.40	2810	8.50	22075	6.80	14600	5.20	8160
5,	9.60	27220	8.50	22075	20.20	97690	8.10	20250	4.80	6750	3.80	3750	8.50	22075	8.80	23460	3.20	2380	7.30	16735	6.40	12930	5.50	9320
6,	9.90	28630	7.00	15450	14.65	53310	7.90	19355	4.80	6750	3.80	3750	8.26	20970	7.50	17605	3.20	2380	7.10	15875	6.00	11300	5.90	10900
7,	9.80	28160	9.10	24870	11.65	37020	7.60	18040	4.70	6400	4.80	6750	12.70	42150	6.80	14600	3.20	2380	6.90	15025	5.80	10500	5.80	10500
8,	9.60	27220	9.80	28160	10.70	32460	7.70	18475	4.70	6400	4.50	5710	14.20	50500	6.50	13345	3.20	2380	6.70	14180	5.50	9320	5.50	9320
9,	9.70	27690	9.60	27220	10.30	30540	11.85	37980	4.50	5710	4.40	5380	13.15	44500	6.20	12110	3.20	2380	6.20	12110	5.60	9710	5.20	8160
10,	9.40	26280	9.40	26280	11.00	33900	15.80	61000	4.40	5380	4.20	4780	8.75	23225	5.80	10500	3.20	2380	5.80	10500	5.70	10100	5.90	10900
11,	9.20	25340	9.00	24400	12.50	41140	15.45	58600	4.30	5070	4.20	4780	9.00	24400	5.60	9710	3.60	3265	5.50	9320	5.00	7450	7.20	16305
12,	9.00	24400	9.00	24400	14.80	54280	12.80	42660	4.20	4780	4.20	4780	9.70	27690	5.50	9320	3.50	3035	5.80	10500	4.70	6400	8.00	19800
13,	8.20	20700	9.00	24400	18.00	78000	14.40	51730	4.10	4510	4.10	4510	8.50	22075	5.40	8930	3.60	3265	6.50	13345	4.70	6400	9.85	28395
14,	7.20	16305	8.30	21155	19.60	91990	10.30	30540	4.00	4250	4.20	4780	7.40	17170	5.40	8930	3.50	3035	6.00	11300	4.70	6400	10.20	30060
15,	6.40	12930	8.00	19800	18.20	79630	9.40	26280	3.90	4000	4.20	4780	6.30	12520	5.20	8160	3.50	3035	5.80	10500	4.70	6400	9.20	25340
16,	6.80	14600	8.20	20700	15.80	61000	8.60	22535	3.80	3750	4.20	4780	5.80	10500	5.00	7450	3.40	2810	5.90	10900	4.60	6050	10.70	32460
17,	7.20	16305	7.80	18915	18.50	82150	8.00	19800	3.80	3750	5.00	7450	5.40	8930	4.60	6050	3.30	2590	5.90	10900	4.50	5710	13.45	46140
18,	7.00	15450	7.70	18475	20.20	97690	7.40	17170	3.70	3500	4.70	6400	5.20	8160	4.40	5380	3.30	2590	5.60	9710	4.40	5380	12.70	42150
19,	6.70	14180	7.20	16305	17.45	73600	7.00	15450	3.70	3500	4.40	5380	5.10	7800	4.20	4780	3.20	2380	5.30	8540	4.30	5070	12.40	40640
20,	6.10	11705	6.60	13760	14.30	51100	6.70	14180	3.60	3265	4.60	6050	5.40	8930	4.10	4510	3.10	2185	4.90	7100	4.20	4780	11.30	35340
21,	6.20	12110	6.60	13760	11.60	36780	6.40	12930	3.50	3035	4.30	5070	12.10	39180	4.00	4250	3.10	2185	4.80	6750	4.20	4780	10.00	29100
22,	10.60	31980	6.50	13345	10.20	30060	6.20	12110	3.50	3035	4.30	5070	15.90	61700	4.00	4250	3.00	2005	4.90	7100	4.20	4780	15.60	59620
23,	16.70	67630	6.40	12930	9.70	27690	6.00	11300	3.50	3035	4.20	4780	13.90	48710	4.00	4250	3.00	2005	5.20	8160	4.10	4510	17.65	75200
24,	12.20	39660	7.20	16305	9.60	27220	5.70	10100	3.70	3500	4.20	4780	13.45	46140	3.90	4000	3.00	2005	5.00	7450	4.10	4510	16.35	64965
25,	10.70	32460	7.20	16305	9.50	26750	5.50	9320	3.70	3500	4.20	4780	13.85	48420	3.90	4000	3.00	2005	4.70	6400	4.10	4510	13.70	47550
26,	9.70	27690	7.70	18475	9.00	24400	5.20	8160	3.70	3500	4.20	4780	14.90	54940	3.80	3750	4.20	4780	4.70	6400	4.10	4510	11.00	33900
27,	8.90	23930	8.80	23460	8.50	22075	5.00	7450	3.80	3750	4.10	4510	11.70	37260	3.70	3500	7.10	15875	4.60	6050	4.50	5710	9.70	27690
28,	8.20	20700	14.03	49480	8.00	19800	4.80	6750	3.90	4000	3.90	4000	9.70	27690	3.60	3265	6.00	11300	7.62	18130	4.70	6400	8.50	22075
29,	7.70	18475	------	------	9.00	24400	4.70	6400	4.60	6050	3.80	3750	10.80	32940	3.60	3265	7.90	19355	11.05	34140	5.00	7450	8.00	19800
30,	7.60	18040	------	------	10.40	31020	4.90	7100	4.60	6050	5.10	7800	10.60	31980	3.60	3265	10.70	32460	12.05	38940	5.20	8160	7.00	15450
31,	13.30	45310	------	------	9.80	28160	------	------	4.20	4780	------	------	9.30	25810	3.60	3265	------	------	11.10	34380	------	------	6.80	14600

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY, PA.

1903.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	8.5	22075	15.3	57590	20.4	99920	11.2	34860	4.8	6750	3.0	2005	6.9	15025	4.6	6050	13.8	48130	3.6	3265	5.6	9710	7.2	16305
2,	11.0	33900	13.1	44230	19.94	95140	12.0	38700	4.6	6050	3.0	2005	6.8	14600	4.6	6050	11.9	38220	3.6	3265	5.6	9710	7.3	16735
3,	12.8	42660	13.0	43700	16.28	64450	10.7	32460	4.4	5380	3.0	2005	6.1	11705	4.3	5070	9.9	28630	3.6	3265	5.4	8930	7.5	17605
4,	13.0	43700	14.65	53310	13.6	46980	9.7	27690	4.3	5070	2.9	1840	5.5	9320	4.0	4250	8.4	21615	3.6	3265	5.2	8160	6.7	14180
5,	13.5	46420	18.78	84560	11.3	35340	9.8	28160	4.2	4780	2.9	1840	5.4	8930	4.8	6750	7.4	17170	3.6	3265	5.0	7450	5.2	8160
6,	9.7	27690	16.5	66100	10.5	31500	9.9	28630	4.1	4510	2.9	1840	5.5	9320	6.7	14180	6.7	14180	3.7	3500	5.0	7450	4.5	5710
7,	8.1	20250	13.9	48710	12.1	39180	8.7	22905	4.0	4250	2.9	1840	7.3	16735	7.9	19355	6.2	12110	3.8	3750	5.0	7450	4.2	4780
8,	7.9	19355	11.3	35340	11.6	36780	8.8	23460	4.0	4250	2.9	1840	7.3	16735	7.6	18040	5.8	10500	4.7	6400	5.2	8160	4.2	4780
9,	6.9	15025	10.0	29100	16.2	63850	10.6	31980	4.0	4250	3.0	2005	3.0	26280	6.8	14600	5.53	9440	10.7	32460	5.3	8540	4.3	5070
10,	**6.8**	**14600**	**8.6**	**22535**	**18.6**	**83000**	**10.8**	**32940**	3.8	3750	3.0	2005	4.8	6750	6.0	11300	5.3	8540	19.2	88310	5.0	7450	4.1	4510
11,	10.7	32460	8.0	19800	17.94	77520	9.8	28160	3.7	3500	2.9	1840	4.4	5380	5.7	10100	5.2	8160	21.25	111215	4.9	7100	4.0	4250
12,	10.0	29100	8.5	22075	18.91	85700	9.0	24400	3.7	3500	3.6	3265	4.3	5070	5.4	8930	5.3	8540	21.15	109755	4.7	6400	3.7	3500
13,	9.5	26750	9.1	24870	17.8	76400	8.9	23930	3.6	3265	6.6	13760	4.0	4250	5.5	9320	6.0	11300	18.15	79220	4.6	6050	3.9	4000
14,	9.1	24870	11.0	33900	15.7	60310	8.3	21155	3.5	3035	5.0	7450	3.8	3750	5.2	8160	5.6	9710	13.7	47550	4.5	5710	4.7	6400
15,	9.1	24870	10.8	32940	13.2	44770	12.2	39660	3.5	3035	7.5	17605	3.7	3500	4.9	7100	5.2	8160	10.5	31500	4.4	5380	4.8	6750
16,	**10.0**	**29100**	**9.3**	**25810**	**11.7**	**37260**	**14.2**	**50500**	3.5	3035	6.4	12930	3.6	3265	4.7	6400	4.8	6750	9.0	24400	4.2	4780	5.8	10500
17,	10.5	31500	8.4	21615	10.6	31980	12.3	40150	3.4	2810	5.8	10500	3.6	3265	4.5	5710	4.6	6050	8.0	19800	7.9	19355	6.6	13760
18,	10.4	31020	7.4	17170	9.9	28630	10.5	31500	3.4	2810	5.2	8160	3.4	2810	4.3	5070	5.2	8160	8.3	21155	12.9	43180	6.8	14600
19,	9.6	27220	10.0	29100	9.6	27220	9.0	24400	3.3	2590	5.0	7450	4.3	5070	3.9	4000	4.8	6750	12.5	41140	13.7	47550	6.3	12520
20,	8.7	22995	9.2	25340	9.2	25340	8.0	19800	3.3	2590	4.8	6750	4.6	6050	3.7	3500	5.0	7450	12.4	40640	10.8	32940	5.8	10500
21,	8.6	22535	9.4	26280	8.7	22995	7.3	16735	3.3	2590	4.7	6400	4.8	6750	3.8	3750	4.8	6750	10.9	33420	8.7	22995	8.9	23930
22,	9.4	26280	10.0	29100	8.3	21155	6.8	14600	3.5	3035	6.8	14600	5.1	7800	5.6	9710	4.7	6400	9.4	26280	7.1	15875	9.0	24400
23,	9.8	28160	10.5	31500	13.92	48830	6.4	12930	3.3	2590	8.0	19800	4.7	6400	5.3	8540	4.4	5380	8.3	21155	6.7	14180	8.4	21615
24,	10.4	31020	10.9	33420	20.88	105910	6.1	11705	3.3	2590	8.93	24070	4.4	5380	5.0	7450	4.2	4780	7.5	17005	6.2	12110	8.0	19800
25,	10.0	29100	11.2	34860	21.16	110000	5.9	10900	3.1	2185	9.45	26515	4.4	5380	4.6	6050	4.0	4250	7.0	15450	6.2	12110	7.5	17605
26,	9.6	27220	10.4	31020	18.0	78000	5.7	10100	3.1	2185	10.4	31020	6.1	11705	4.4	5380	3.9	4000	6.8	14600	6.1	11705	7.1	15875
27,	8.7	22995	9.6	27220	15.4	58260	5.5	9320	3.1	2185	10.2	30060	5.2	8160	4.3	5070	3.8	3750	6.5	13345	5.8	10500	7.2	16305
28,	8.2	20700	10.2	30060	12.6	41640	5.3	8540	3.1	2185	8.0	19800	4.5	5710	5.4	8930	3.8	3750	6.2	12110	5.5	9320	10.4	31020
29,	8.2	20700	-----	-----	10.7	32460	5.1	7800	3.0	2005	6.9	15025	4.1	4510	9.15	25105	3.7	3500	6.0	11300	6.0	11300	9.7	27690
30,	14.54	52610	-----	-----	9.9	28630	4.9	7100	3.0	2005	7.6	18040	4.2	4780	19.4	90170	3.6	3265	5.8	10500	7.7	18475	9.2	25340
31,	17.6	74800	-----	-----	9.8	28160	-----	-----	3.0	2005	-----	-----	4.7	6400	16.83	68650	-----	-----	5.6	9710	-----	-----	8.4	21615

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY, PA.

1904.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	9.0	24400	14.0	49300	10.8	16470	12.0	38700	11.5	36300	5.7	10100	3.5	3035	4.8	6750	3.7	3500	4.8	6750	5.3	8540	4.2	4780
2,	8.9	23930	13.0	43700	10.9	16710	15.1	56260	10.5	31500	7.4	17170	3.5	3035	4.4	5380	3.6	3265	5.4	8930	5.1	7800	4.1	4510
3,	8.5	22075	12.3	40150	11.15	17310	15.8	61600	9.4	26280	7.0	15450	3.5	3035	4.2	4780	3.5	3035	5.9	10900	4.9	7100	4.2	4780
4,	7.2	16305	11.6	36780	16.5	33050	14.0	49300	8.4	21615	6.4	12930	3.5	3035	4.3	5070	3.4	2810	5.2	8160	4.8	6750	4.2	4780
5,	6.5	13345	11.0	33900	*18.2	39815	12.0	38700	7.6	18040	6.9	11300	3.5	3035	5.3	8540	3.4	2810	4.7	6400	4.6	6050	3.6	3265
6,	6.7	14180	†10.9	33420	17.2	35800	10.7	32460	7.0	15450	9.1	24870	3.5	3035	5.0	7450	3.3	2590	4.5	5710	4.5	5710	3.3	2590
7,	7.2	16305	11.6	36780	17.9	38600	10.2	30060	6.7	14180	7.4	17170	3.6	3265	4.4	5380	3.3	2590	4.3	5070	4.5	5710	3.5	3035
8,	7.2	16305	‡21.7	58995	25.2	86600	10.5	31500	6.3	12520	6.4	12930	3.7	3500	4.6	6050	3.3	2590	4.0	4250	4.5	5710	3.6	3265
9,	7.3	16735	35.3	87400	30.6	129060	11.0	33900	6.0	11300	6.6	13760	4.2	4780	5.0	7450	3.5	3035	4.0	4250	4.5	5710	3.3	2590
10,	7.4	17170	24.6	81850	26.6	97650	11.7	37260	5.7	10100	11.6	36780	3.8	3750	4.4	5380	3.5	3035	3.9	4000	4.5	5710	3.2	2380
11,	7.3	16735	23.8	75550	24.0	77125	16.2	63850	5.5	9320	10.9	33420	3.7	3500	4.6	6050	3.3	2590	3.8	3750	4.4	5380	3.1	2185
12,	7.1	15875	22.0	61350	§22.0	61350	14.3	51100	5.2	8160	8.5	22075	4.1	4510	4.0	4250	3.3	2590	3.8	3750	4.4	5380	3.3	2590
13,	7.0	15450	20.3	49390	§19.3	44615	12.1	39180	5.0	7450	7.1	15875	4.5	5710	3.9	4000	3.2	2380	3.9	4000	4.3	5070	3.2	2380
14,	7.0	15450	¶18.0	39000	§17.4	36600	10.8	32940	4.8	6750	6.2	12110	4.2	4780	3.8	3750	3.1	2185	7.0	15450	4.2	4780	3.3	2590
15,	6.7	14180	17.0	35000	§15.9	30850	9.7	27690	4.8	6750	5.6	9710	3.9	4000	3.6	3265	3.6	3265	8.3	21155	4.3	5070	3.2	2380
16,	6.4	12930	15.7	30155	§14.9	27470	8.9	23930	6.1	11705	5.2	8160	3.8	3750	3.5	3035	5.5	9320	6.9	15025	4.3	5070	3.3	2590
17,	6.2	12110	14.7	26815	§14.0	24650	8.3	21155	8.0	19800	5.1	7800	3.6	3265	3.4	2810	4.3	5070	6.0	11300	4.3	5070	3.3	2590
18,	6.0	11300	12.9	21590	§13.0	21850	8.0	19800	7.9	19355	5.6	9710	3.9	4000	3.3	2590	4.8	6750	5.5	9320	4.4	5280	3.3	2590
19,	‖5.9	10900	12.6	20820	§12.5	20570	7.9	19355	7.1	15875	4.8	6750	3.6	3265	3.3	2590	4.4	5380	5.1	7800	4.3	5070	3.3	2590
20,	5.6	9710	|12.9	21590	12.8	42660	7.9	19355	11.2	34860	4.5	5710	3.7	3500	3.2	2380	4.1	4510	4.8	6750	4.3	5070	3.4	2810
21,	x5.6	9710	12.7	21075	13.6	46980	7.8	18915	10.2	30060	4.3	5070	4.2	4780	3.2	2380	3.8	3750	5.0	7450	4.3	5070	3.4	2810
22,	6.6	11300	12.9	21590	10.5	31500	7.4	17170	8.5	22075	4.1	4510	3.8	3750	3.3	2590	3.6	3265	8.6	22535	4.6	6050	3.4	2810
23,	12.7	42150	13.7	23775	9.7	27690	7.1	15875	7.3	16735	4.3	5070	3.5	3035	3.7	3500	3.4	2810	10.2	30060	4.6	6050	3.3	2590
24,	**18.2	79630	12.8	21330	16.9	69200	7.1	15875	6.5	13345	4.0	4250	3.4	2810	4.9	7100	3.4	2810	10.2	30060	5.3	8540	3.5	3035
25,	13.5	46420	12.7	21075	16.9	69200	7.0	15450	6.5	13345	3.9	4000	3.3	2590	6.4	12930	3.4	2810	8.8	23460	5.5	9320	3.6	3265
26,	††11.6	36780	12.6	20820	20.4	99920	6.9	15025	6.7	14180	3.8	3750	3.4	2810	5.8	10500	4.0	4250	7.4	17170	5.2	8160	3.3	2590
27,	††10.1	29580	12.0	19350	22.9	136920	7.2	16305	6.5	13345	3.7	3500	3.7	3500	5.3	8540	5.4	8930	6.9	15025	5.0	7450	3.5	3035
28,	††9.0	24400	12.0	19350	22.7	133760	7.9	19355	5.9	10900	3.5	3035	3.6	3265	4.6	6050	5.3	8540	6.7	14180	4.8	6750	10.0	29100
29,	††8.2	20700	11.5	18150	18.4	81300	12.4	40640	6.0	11300	3.5	3035	3.6	3265	4.3	5070	5.2	8160	6.4	12930	4.2	4780	13.85	48420
30,	††9.2	25340	-----	-----	14.2	50500	12.8	42660	5.5	9320	3.4	2810	3.8	3750	4.1	4510	4.7	6400	6.0	11300	4.2	4780	13.3	45310
31,	13.9	48710	-----	-----	11.7	37260	-----	-----	5.3	8540	-----	-----	4.1	4510	3.9	4000	-----	-----	5.9	10900	-----	-----	10.8	32940

Note:—From February 8th to March 19th, discharges reduced 50 per cent. on account of ice gorge.

*Ice still unbroken.

†Closed with anchor ice as far up as Ransom.

‡Ice started at 5.15 P. M.; moved until Feb. 10, 12 M. Gorged below city.

§Still gorged.

¶Ice blocked as far as Tunkhannock, Pa.

‖Ice started at Pittston at 1:30 P. M., at Wilkes-Barre, 2 P. M. River closed December 10 to 28th, inclusive.

|Ice blocked as far as Laceyville, Pa.

x12 Midnight ice still running; stream nearly full.

**River full of running ice all day; 10 P. M. very little ice running.

††Anchor ice.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY.

1905. Day.	JAN		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	8.8	23460	6.8	14600	3.8	3750	15.2	56920	5.5	9320	3.8	3750	5.2	8160	4.1	4510	3.3	2590	4.2	4780	4.3	5070	9.8	28160
2,	8.0	19800	6.6	13760	3.8	3750	13.7	47550	5.4	8930	3.6	3265	4.9	7100	4.7	6400	3.4	2810	4.1	4510	4.2	4780	9.2	25340
3,	8.2	20700	6.4	12930	3.6	3265	12.0	38700	5.3	8540	3.6	3265	4.8	6750	4.6	6050	5.9	10900	4.0	4250	4.3	5070	7.6	18040
4,	8.3	21155	6.1	11705	3.5	3035	10.4	31020	5.1	7800	3.5	3035	8.0	19800	5.0	7450	5.7	10100	4.0	4250	4.7	6400	14.8	54280
5,	10.5	31500	5.9	10900	3.5	3035	9.3	25810	4.9	7100	3.4	2810	6.2	12110	4.6	6050	6.1	11705	4.0	4250	4.6	6050	16.0	62400
6,	11.5	36300	5.9	10900	3.4	2810	10.0	29100	4.8	6750	3.5	3035	5.5	9320	4.3	5070	9.2	25340	4.7	6400	4.3	5070	13.0	43700
7,	14.6	52990	5.9	10900	3.4	2810	12.4	40640	4.7	6400	3.6	3265	4.9	7100	4.0	4250	11.2	34860	4.7	6400	4.4	5380	10.6	31980
8,	14.1	49900	5.6	9710	3.3	2590	12.1	39180	4.8	6750	5.5	9320	4.7	6400	3.8	3750	9.8	28160	4.2	4780	4.5	5710	9.0	24400
9,	13.4	45860	5.5	9320	3.8	3750	11.0	33900	5.0	7450	5.8	10500	4.4	5380	3.6	3265	7.7	18475	4.0	4250	5.3	8540	8.2	20700
10,	11.2	34860	5.4	8930	3.9	4000	10.0	29100	5.0	7450	5.5	9320	4.3	5070	3.5	3035	6.7	14180	3.8	3750	5.6	9710	7.9	19355
11,	9.6	27220	5.4	8930	4.4	5380	9.2	25340	4.7	6400	5.1	7800	4.2	4780	3.6	3265	6.0	11300	3.7	3500	5.4	8930	7.6	18040
12,	8.2	20700	5.2	8160	4.6	6050	9.2	25340	4.7	6400	4.8	6750	4.3	5070	3.8	3750	6.0	11300	4.6	6050	5.2	8160	7.3	16735
13,	8.2	20700	4.9	7100	4.6	6050	9.7	27690	4.6	6050	4.7	6400	4.0	4250	5.7	10100	6.6	13760	7.2	16305	4.9	7100	6.7	14180
14,	7.8	18915	4.8	6750	4.6	6050	9.8	28160	4.5	5710	4.9	7100	4.0	4250	4.9	7100	8.2	20700	8.5	22075	4.8	6750	6.3	12520
15,	7.7	18475	4.8	6750	4.5	5710	8.9	23930	4.4	5380	4.7	6400	4.0	4250	5.1	7800	7.6	18040	7.7	18475	4.6	6050	6.0	11300
16,	12.3	40150	4.8	6750	4.5	5710	8.1	20250	4.4	5380	4.5	5710	3.9	4000	5.4	8930	6.6	13760	6.6	13760	4.6	6050	5.8	10500
17,	11.0	33900	4.7	6400	4.6	6050	8.0	19800	4.4	5380	4.3	5070	3.9	4000	5.3	8540	5.8	10500	5.7	10100	4.5	5710	5.0	7450
18,	10.6	31980	4.7	6400	5.3	8540	7.8	18915	4.7	6400	4.0	4250	3.9	4000	5.3	8540	5.7	10100	5.3	8540	4.3	5070	4.7	6400
19,	10.8	32940	4.7	6400	15.0	55600	7.5	17605	4.8	6750	3.9	4000	3.9	4000	5.8	10500	5.6	9710	4.9	7100	4.3	5070	4.6	6050
20,	10.9	33420	4.6	6050	19.0	86500	7.2	16305	4.6	6050	5.2	8160	3.7	3500	5.6	9710	7.5	17605	5.0	7450	4.2	4780	4.8	6750
21,	10.9	33420	4.6	6050	19.1	87400	6.9	15025	4.5	5710	7.0	15450	3.7	3500	5.0	7450	7.4	17170	6.1	11705	4.2	4780	4.9	7100
22,	10.1	29580	4.6	6050	19.2	88310	6.8	14600	4.5	5710	7.3	16735	3.6	3265	4.5	5710	6.8	14600	6.6	13760	4.1	4510	6.0	11300
23,	9.3	25810	4.5	5710	18.0	78000	8.3	21155	4.4	5380	13.3	45310	3.5	3035	4.2	4780	6.6	13760	6.4	12930	3.9	4000	9.5	26750
24,	8.4	21615	4.4	5380	17.1	70800	8.4	21615	4.3	5070	12.4	40640	3.4	2810	4.1	4510	6.2	12110	5.8	10500	3.8	3750	10.0	29100
25,	7.5	17605	4.3	5070	20.4	99920	7.4	17170	4.1	4510	10.1	29580	3.4	2810	4.0	4250	5.6	9710	5.5	9320	3.7	3500	9.3	25810
26,	6.5	13345	4.1	4510	23.4	144800	6.8	14600	4.0	4250	8.3	21155	4.7	6400	3.9	4000	5.2	8160	5.3	8540	3.6	3265	7.5	17605
27,	5.6	9710	3.9	4000	22.6	132180	6.4	12930	3.9	4000	7.0	15450	4.6	6050	3.7	3500	4.9	7100	5.1	7800	3.6	3265	6.7	14180
28,	5.2	8160	3.8	3750	21.3	111950	6.1	11705	3.8	3750	6.0	11300	4.3	5070	3.6	3265	4.6	6050	4.9	7100	3.7	3500	6.4	12930
29,	6.2	12110	-----	-----	20.0	95700	5.8	10500	3.7	3500	5.6	9710	4.0	4250	3.4	2810	4.5	5710	4.7	6400	3.9	4000	6.0	11300
30,	6.4	12930	-----	-----	18.3	80460	5.7	10100	4.0	4250	5.4	8930	3.7	3500	3.3	2590	4.3	5070	4.5	5710	5.4	8930	6.2	12110
31,	6.7	14180	-----	-----	16.3	64590	-----	-----	3.9	4000	-----	-----	3.6	3265	3.3	2590	-----	-----	4.4	5380	-----	-----	8.8	23460

Note: From January 15 to February 23 the river was frozen entirely across, except for a narrow channel near the east bank. Gage readings are to water surface in hole cut in ice. Thickness of ice, 1 to 1.2 feet. From February 24 to March 4 the ice gradually broke up. The following comparative readings were made:

Date.	Water surface. Feet.	Top of ice. Feet.	Date.	Water surface. Feet.	Top of ice. Feet.
February 8,	5.6	5.6	February 23,	4.5	4.5
February 17,	4.7	4.7	February 25,	4.3	4.3

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY, PA.

1906.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	8.0	19800	6.0	11300	7.6	18040	17.7	75600	5.6	9710	8.6	22535	5.7	10100	3.4	2810	4.1	4510	2.4	1155	5.3	8540	5.4	8930
2,	7.0	15450	5.9	10900	6.4	12930	14.8	54280	5.4	8930	8.5	22075	5.5	9320	3.2	2380	3.7	3500	2.8	1680	5.3	8540	5.2	8160
3,	6.2	12110	5.6	9710	5.2	8160	12.7	42150	5.4	8930	6.8	14600	7.5	17605	3.3	2590	3.5	3035	2.7	1530	5.4	8930	5.0	7450
4,	6.0	11300	6.7	14180	11.4	35820	11.0	33900	5.4	8930	6.2	12110	8.5	22705	3.3	2590	4.0	4250	2.7	1530	5.2	8160	5.0	7450
5,	6.1	11705	6.1	11705	13.0	43700	11.1	34380	7.0	15450	5.7	10100	7.1	15875	3.8	3750	3.3	2590	3.1	2185	5.0	7450	4.8	6750
6,	6.6	13760	5.7	10100	11.6	36780	12.8	42660	7.4	17170	5.4	8930	6.1	11705	3.4	2810	3.1	2185	3.4	2810	4.8	6750	4.8	6750
7,	7.1	15875	5.3	8540	10.8	32940	14.2	50500	6.7	14180	7.4	17170	5.4	8930	4.1	4510	3.1	2185	3.2	2380	4.6	6050	6.2	12110
8,	6.3	12520	4.7	6400	8.7	22995	12.6	11640	6.4	12930	7.8	18915	5.0	7450	4.1	4510	2.8	1680	3.1	2185	4.4	5380	9.9	28630
9,	5.8	10500	4.8	6750	7.4	17170	11.0	33900	6.0	11300	6.9	15025	4.7	6400	4.2	4780	3.0	2005	3.1	2185	4.2	4780	8.8	23460
10,	6.3	12520	5.1	7800	6.9	15025	11.6	36780	5.9	10900	6.2	12110	4.5	5710	5.0	7450	2.9	1840	3.1	2185	4.0	4250	7.0	15450
11.	5.9	10900	5.0	7450	6.4	12930	14.8	54280	5.6	9710	6.5	13345	4.4	5380	4.5	5710	2.8	1680	3.3	2590	3.9	4000	6.3	12520
12,	6.2	12110	5.1	7800	6.0	11300	15.6	59620	5.6	9710	6.6	13760	4.5	5710	3.9	4000	2.7	1530	3.1	2185	4.0	4250	6.3	12520
13,	5.9	10900	4.9	7100	5.8	10500	14.3	51100	5.6	9710	6.4	12930	4.8	6750	4.3	5070	2.7	1530	3.2	2380	4.1	4510	8.0	19800
14,	5.8	10500	5.2	8160	5.4	8930	12.5	41140	5.3	8540	6.1	11705	4.7	6400	4.0	4250	2.7	1530	3.2	2380	4.4	5380	9.2	25340
15,	5.7	10100	5.1	7800	5.3	8540	12.4	40640	5.2	8160	5.4	8930	4.4	5380	3.7	3500	2.7	1530	3.3	2590	4.5	5710	8.6	22535
16,	5.4	8930	4.7	6400	5.0	7450	15.1	56260	5.2	8160	4.9	7100	4.1	4510	3.3	2590	2.6	1395	3.3	2590	4.7	6400	7.7	18475
17,	5.4	8930	4.1	4510	5.0	7450	15.2	56920	5.2	8160	5.3	8540	3.9	4000	3.2	2380	2.6	1395	3.2	2380	4.5	5710	9.3	25810
18,	4.9	7100	4.2	4780	4.8	6750	13.4	45860	5.3	8540	7.2	16305	4.0	4250	3.1	2185	2.6	1395	3.1	2185	4.4	5380	9.2	25340
19,	5.0	7450	4.3	5070	4.6	6050	11.4	35820	5.7	10100	9.9	28630	4.1	4510	3.0	2005	2.5	1270	3.0	2005	5.7	10100	8.0	19800
20,	5.1	7800	4.4	5380	4.4	5380	9.8	28160	6.0	11300	10.2	30060	4.2	4780	2.8	1680	2.5	1270	3.2	2380	8.5	22075	6.6	13760
21,	5.1	7800	4.3	5070	4.2	4780	8.8	23460	5.6	9710	10.0	29100	4.2	4780	2.8	1680	2.6	1395	5.5	9320	9.4	26280	5.9	10900
22,	5.2	8160	5.3	8540	4.2	4780	8.1	20250	5.2	8160	8.6	22535	4.2	4780	2.9	1840	2.6	1395	8.6	22535	9.0	24400	5.8	*7600
23,	6.2	12110	5.6	9710	4.0	4250	7.6	18040	4.8	6750	7.3	16735	4.0	4250	3.7	3500	2.6	1395	7.2	16305	9.1	24870	6.2	*7600
24,	11.9	38220	10.4	31020	4.0	4250	8.5	22075	4.4	5380	6.4	12930	3.8	3750	3.7	3500	2.5	1270	6.6	13760	8.3	21155	5.9	*7600
25,	14.8	54280	8.8	23460	4.1	4510	8.7	22995	4.2	4780	5.8	10500	4.0	4250	3.8	3750	2.5	1270	5.7	10100	7.5	17605	8.2	*7600
26,	12.6	41640	9.3	25810	4.2	4780	8.2	20700	4.0	4250	5.3	8540	3.7	3500	3.7	3500	2.6	1395	5.5	9320	6.7	14180	7.4	*7600
27,	10.3	30540	8.8	23460	4.3	5070	7.4	17170	4.0	4250	5.0	7450	3.6	3265	3.9	4000	2.9	1840	5.1	7800	6.3	12520	6.9	*7600
28,	8.3	21155	8.3	21155	9.8	28160	6.8	14600	5.1	7800	4.7	6400	3.5	3035	4.1	4510	2.8	1680	5.1	7800	5.8	10500	7.1	*7600
29,	7.5	17605	-----	-----	17.4	73200	6.3	12520	14.0	49300	4.4	5380	3.4	2810	4.0	4250	2.8	1680	5.1	7800	5.6	9710	8.2	*7600
30,	6.8	14600	-----	-----	15.3	57590	5.9	10900	12.6	41640	5.9	10900	3.2	2380	4.3	5070	2.8	1680	5.2	8160	5.5	9320	7.5	*7600
31,	6.4	12930	-----	-----	15.0	55600	-----	-----	10.4	31020	-----	-----	3.5	3035	4.7	6400	-----	-----	5.9	8160	-----	-----	6.2	*7600

*Assume average 7,600 sec.-ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY, PA.

1907. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	13.5	46420	9.4	------	3.7	3500	9.8	28160	9.3	25810	4.6	6050	3.8	3750	3.2	2380	2.2	970	3.8	3750	7.7	18475	5.7	10100
2,	15.4	58260	9.2	------	3.8	3750	8.7	22995	9.6	27220	4.5	5710	3.9	4000	3.1	2185	2.2	970	3.8	3750	6.7	14180	5.6	9710
3,	13.5	46420	9.2	------	3.8	3750	7.7	18475	9.7	27690	4.7	6400	5.2	8160	3.0	2005	2.2	970	4.4	5380	7.4	17170	5.4	8930
4,	11.3	35340	8.3	------	3.8	3750	7.0	15450	8.8	23460	4.9	7100	4.8	6750	2.9	1840	2.3	1065	4.4	5380	9.2	25340	5.2	8160
5,	12.2	39660	8.0	------	3.6	3265	6.6	13760	7.9	19355	5.2	8160	4.5	5710	2.9	1840	2.5	1270	5.0	7450	9.8	28160	4.9	7100
6,	14.4	51730	7.1	------	3.8	3750	6.3	12520	7.6	18040	5.0	7450	4.2	4780	2.9	1840	2.8	1680	5.7	10100	8.7	22995	4.8	6750
7,	12.5	41140	6.9	------	3.4	2810	6.1	11705	7.3	16735	4.8	6750	3.9	4000	2.8	1680	2.8	1680	7.1	15875	9.4	26280	4.5	5710
8,	10.8	32940	7.0	------	3.7	3500	6.0	11300	7.1	15875	5.1	7800	3.9	4000	2.9	1840	3.4	2810	6.7	14180	12.1	39180	4.5	5710
9,	13.3	45310	7.0	------	3.3	2590	5.8	10500	8.0	19800	5.1	7800	4.0	4250	2.8	1680	3.8	3750	7.7	18475	14.4	51730	4.7	6400
10,	13.7	47550	6.9	------	3.3	2590	5.7	10100	8.4	21615	5.0	7450	3.9	4000	2.7	1530	3.6	3265	8.8	23460	13.0	43700	*6.3	31510
11,	11.3	35340	6.6	------	3.2	2380	6.1	11705	8.1	20250	4.7	6400	3.6	3265	2.7	1530	3.6	3265	9.1	24870	11.3	35340	16.5	66100
12,	9.5	26750	6.3	------	3.1	2185	6.1	11705	7.4	17170	4.4	5380	3.5	3035	2.6	1395	6.7	14180	7.8	18915	9.6	27220	18.5	82150
13,	8.5	22075	5.6	------	3.1	2185	6.7	14180	7.0	15450	4.1	4510	3.5	3035	2.6	1395	7.4	17170	7.0	15450	8.5	22075	15.8	61000
14,	8.1	20250	5.2	------	3.5	3035	6.9	15025	6.6	13760	4.0	4250	4.9	7100	2.5	1270	7.4	17170	7.0	15450	7.7	18475	12.4	40640
15,	8.6	22535	5.2	------	6.0	11300	6.8	14600	6.2	12110	4.0	4250	4.9	7100	2.5	1270	6.0	11300	6.7	14180	7.1	15875	10.4	31020
16,	9.8	28160	5.6	------	16.0	62400	6.8	14600	5.8	10500	3.8	3750	4.8	6750	2.5	1270	5.0	7450	6.1	11705	6.6	13760	9.4	26280
17,	8.7	22995	5.6	------	12.2	39660	6.5	13345	6.0	11300	3.6	3265	4.2	4780	2.5	1270	4.4	5380	5.7	10100	6.1	11705	8.8	23460
18,	8.4	21615	5.4	------	13.5	46420	6.2	12110	5.7	10100	3.5	3035	3.9	4000	2.5	1270	4.0	4250	5.3	8540	5.8	10500	8.4	21615
19,	6.6	13760	5.2	------	13.6	46980	6.1	11705	5.7	10100	3.4	2810	3.6	3265	2.5	1270	4.0	4250	5.0	7450	5.6	9710	7.9	19355
20,	7.3	16735	4.8	------	12.5	41140	6.0	11300	5.5	9320	3.4	2810	3.6	3265	2.4	1155	4.4	5380	4.6	6050	5.5	9320	7.0	15450
21,	12.4	40640	5.0	------	10.9	33420	5.9	10900	5.4	8930	3.5	3035	3.6	3265	2.3	1055	4.0	4250	4.5	5710	5.5	9320	7.0	15450
22,	12.5	41140	4.9	------	9.9	28630	5.7	10100	5.5	9320	3.3	2590	3.6	3265	2.3	1055	3.8	3750	4.5	5710	5.5	9320	6.4	12930
23,	9.8	28160	4.6	------	10.7	32460	5.5	9320	5.2	8160	3.3	2590	3.6	3265	2.2	970	3.7	3500	4.6	6050	5.4	8930	6.7	14180
24,	10.5	31500	4.1	------	15.1	56260	5.3	8540	4.9	7100	3.4	2810	3.4	2810	2.3	1055	4.1	4510	4.6	6050	5.3	8540	12.4	40640
25,	11.3	35340	3.7	------	14.8	54280	6.7	14180	4.6	6050	3.3	2590	3.3	2590	2.3	1055	4.3	5070	4.5	5710	5.3	8540	18.7	83860
26,	10.8	32940	3.7	------	13.5	46420	10.8	32940	4.5	5710	3.2	2380	3.3	2590	2.3	1055	4.0	4250	4.2	4780	5.1	7800	16.5	66100
27,	10.1	29580	3.7	------	11.7	37260	11.0	33900	4.4	5380	3.4	2810	3.6	3265	2.3	1055	4.0	4250	4.1	4510	5.2	8160	13.6	46980
28,	9.9	28630	3.9	------	10.7	32460	14.6	52990	4.5	5710	3.3	2590	3.4	2810	2.3	1055	3.9	4000	4.3	5070	5.2	8160	11.7	37260
29,	9.8	28160	------	------	10.8	32940	12.6	41640	5.1	7800	3.2	2380	3.7	3500	2.2	970	3.9	4000	6.0	11300	5.5	9320	12.5	41140
30,	10.1	29580	------	------	11.7	37260	10.9	33420	5.3	8540	3.4	2810	3.6	3265	2.2	970	3.9	4000	8.8	23460	5.7	10100	13.7	47550
31,	10.0	29100	------	------	11.0	33900	------	------	5.0	7450	------	------	3.3	2590	2.2	970	------	------	8.8	23460	------	------	12.5	41140

February, river affected by ice. Run-off estimated on basis of yield of other Susquehanna basin streams. See "Estimated Monthly Discharge."
*14.2 at 5.00 P. M.—50,000 sec.-ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY, PA.

1908 Day.	JAN.		FEB.		MAR		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	11.95	38460	6.95	15235	6.55	13555	14.85	54610	6.95	15235	5.85	10700	2.94	1905	2.94	1905	2.24	1005	2.14	925	2.64	1450	2.54	1320
2,	9.9	28630	7.9	19355	6.2	12110	12.5	41140	10.2	30260	6.2	12110	2.84	1745	2.84	1745	2.24	1005	2.14	925	2.44	1200	2.54	1320
3,	9.45	26515	6.85	14810	5.95	11100	11.25	35100	11.75	37700	5.85	10700	2.94	1905	2.74	1590	2.14	925	2.14	925	2.44	1200	2.44	1200
4,	8.4	21615	6.6	13760	6.5	13345	10.5	31500	11.6	36780	5.4	8930	3.24	2465	2.64	1450	2.14	925	2.14	925	2.44	1200	2.44	1200
5,	7.45	17390	6.25	12315	7.45	17390	9.35	26045	10.25	30300	4.95	7275	3.04	2080	2.54	1320	2.14	925	2.14	925	2.44	1200	2.44	1200
6,	6.65	14070	6.35	12725	7.55	17825	8.55	22305	9.25	25575	4.55	5880	3.04	2080	2.54	1320	2.14	925	2.14	925	2.54	1320	2.34	1095
7,	6.1	11705	6.5	13345	7.3	16735	8.0	19800	8.3	21155	4.4	5380	3.04	2080	2.64	1450	2.14	925	2.14	925	2.54	1320	2.44	1200
8,	5.55	9515	6.25	12315	6.55	13555	8.35	21385	13.85	48420	4.05	4380	3.14	2265	2.64	1450	2.04	865	2.14	925	2.54	1320	2.44	1200
9,	*7.6	†15000	6.2	12110	6.8	14600	8.8	23400	17.7	70310	3.9	4000	3.34	2680	2.54	1320	2.04	865	2.04	865	2.44	1200	2.24	1005
10,	*10.05	†15000	6.05	11505	6.55	13555	10.25	30300	15.45	58600	3.75	4625	2.94	1905	2.64	1450	2.04	865	2.04	865	2.44	1200	2.04	865
11,	*10.05	†15000	5.95	11100	6.25	12315	11.25	35100	14.15	52045	3.65	3385	2.84	1745	2.54	1320	2.04	865	2.04	865	2.34	1095	2.24	1005
12,	*10.3	†15000	6.0	11300	7.0	15450	10.0	29100	12.6	41640	3.6	3265	2.74	1590	2.54	1320	2.04	865	2.14	925	2.34	1095	2.44	1200
13,	*10.75	†15000	5.85	†10700	10.35	30780	8.95	24165	10.75	32700	3.55	3150	2.74	1590	2.54	1320	2.04	865	2.14	925	2.44	1200	2.24	1005
14,	*9.1	†15000	5.9	10900	17.3	72400	8.3	21155	9.4	26280	3.4	2810	2.74	1590	2.54	1320	2.04	865	2.24	1005	2.44	1200	2.54	1320
15,	*9.95	†15000	7.05	15660	20.55	101705	7.65	18260	8.45	21845	3.45	3920	2.74	1590	2.44	1200	2.04	865	2.14	925	2.44	1200	2.54	1320
16,	*8.45	†15000	19.55	91530	20.95	106890	7.65	18260	9.15	25105	3.55	3150	2.94	1905	2.44	1200	2.04	865	2.14	925	2.54	1320	2.54	1320
17,	7.1	15875	21.8	119540	20.9	106180	8.1	20270	9.9	28630	3.4	2810	2.74	1599	2.44	1200	1.94	830	2.14	925	2.64	1450	2.54	1320
18,	6.95	15235	17.55	74400	16.85	68805	8.65	22765	9.25	25575	3.35	2700	2.74	1590	2.44	1200	1.94	830	2.14	925	2.64	1450	2.64	1450
19,	6.1	11705	14.0	49300	14.9	54940	8.1	20250	8.3	21155	3.4	2810	2.74	1590	2.44	1200	1.94	830	2.14	925	2.64	1450	2.24	1005
20,	5.75	10300	10.85	33180	16.05	62760	8.85	23695	7.35	16955	3.35	2700	2.64	1450	2.44	1200	1.94	830	2.14	925	2.54	1320	2.34	1095
21,	5.55	9515	8.95	24165	12.95	43440	10.75	32700	6.85	14810	3.25	2485	2.64	1450	2.44	1200	1.94	830	2.14	925	2.54	1320	2.54	1320
22,	5.5	9320	8.2	20700	11.0	33900	10.4	31020	6.6	13760	3.2	2380	2.64	1450	2.54	1320	1.94	830	2.04	865	2.54	1320	2.54	1320
23,	5.45	9125	7.35	16955	10.25	30300	9.25	25575	6.75	14390	3.15	2285	2.74	1590	2.14	1200	1.94	830	2.04	865	2.54	1320	2.24	1005
24,	6.0	11300	7.0	15450	10.4	31020	8.4	21615	6.5	13345	3.1	2185	2.84	1745	2.44	1200	1.94	830	2.04	865	2.54	1320	2.14	925
25,	5.75	10300	6.25	12315	12.75	42405	7.65	18260	6.15	11905	3.15	2285	3.44	2900	2.44	1200	1.94	830	2.04	865	2.54	1320	2.64	1450
26,	5.45	9125	6.15	11905	14.85	54610	7.15	16090	6.05	11500	3.25	2485	4.24	4895	2.44	1200	1.94	830	2.04	865	2.54	1320	2.74	1590
27,	5.5	9320	7.8	18915	14.0	49300	6.8	14600	5.7	10100	3.4	2810	5.64	9865	2.74	1590	1.94	830	2.44	1200	2.64	1450	2.54	1320
28,	*8.05	‡8050	7.95	19575	15.55	59280	6.65	13970	5.35	8735	3.05	2095	4.44	5510	2.24	1005	1.94	830	2.44	1200	2.64	1450	2.34	1095
29,	*9.4	‡8050	7.2	16305	17.7	75600	6.6	13760	5.5	9320	3.2	2380	3.74	3600	2.24	1005	2.34	1095	2.64	1450	2.54	1320	2.44	1200
30,	*9.85	‡8050	-----	-----	19.75	93370	6.75	14390	5.35	8735	3.05	2095	3.34	2678	2.24	1005	2.14	925	2.84	1745	2.54	1320	2.34	1095
31,	*8.5	‡8050	-----	-----	18.0	78000	-----	-----	5.2	8100	-----	-----	3.14	2265	2.24	1005	-----	-----	2.84	1745	-----	-----	2.64	1450

*Ice affected gage. Estimated on basis of Danville.
†Average flow 15,000 second feet. ‡Average flow 8050 sec.-ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY, PA.

1909.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.2	970	8.7	22995	10.5	31500	9.5	26750	17.7	75600	4.4	5380	3.8	3750	2.6	1395	2.4	1155	2.2	970	2.4	1155	2.5	1270
2,	2.2	970	9.4	26280	9.3	25810	9.3	25810	22.2	125860	4.2	4780	3.5	3035	2.6	1395	2.4	1155	2.2	970	2.4	1155	2.5	1270
3,	2.3	1055	9.4	26280	8.2	20700	9.1	24870	20.6	102300	4.1	4510	3.3	2590	2.6	1395	2.3	1055	2.2	970	2.4	1155	2.6	1395
4,	2.6	1395	8.9	23930	7.9	19355	9.5	26750	15.5	58940	3.9	4000	3.2	2380	2.5	1270	2.3	1055	2.2	970	2.4	1155	2.6	1395
5,	3.1	2185	9.1	24870	7.7	18475	9.5	26750	13.8	48130	3.9	4000	3.1	2185	2.5	1270	2.3	1055	2.1	895	2.4	1155	2.6	1395
6,	5.6	9710	9.4	26280	6.9	15025	9.2	25340	12.5	41140	6.0	11300	3.1	2185	2.5	1270	2.2	970	2.1	895	2.3	1055	2.6	1395
7,	9.7	27690	11.4	35820	6.4	12930	8.9	23930	10.9	33420	7.4	17170	3.0	2005	2.4	1155	2.1	895	2.2	970	2.2	970	2.6	1395
8,	10.4	31020	10.9	33420	6.4	12930	9.6	27220	10.7	32460	6.7	14180	2.9	1840	2.4	1155	2.1	895	2.1	895	2.3	1055	2.6	1395
9,	8.4	21615	9.9	28630	6.7	14180	10.1	29580	10.0	29100	5.7	10100	2.9	1840	2.3	1055	2.1	895	2.2	970	2.3	1055	2.4	1155
10,	6.8	14600	8.3	21155	6.9	15025	9.7	27690	9.1	24870	5.4	8930	2.9	1840	2.3	1055	2.1	895	2.1	895	2.3	1055	2.7	1530
11,	5.8	10500	8.4	21615	9.4	26280	8.8	23460	9.2	25340	5.1	7800	2.8	1680	2.2	970	2.3	1055	2.1	895	2.3	1055	2.3	1055
12,	5.6	9710	7.6	18040	12.1	39180	8.0	19800	8.9	23930	8.8	23460	2.8	1680	2.2	970	2.2	970	2.3	1055	2.3	1055	2.2	970
13,	5.3	8540	7.3	16735	10.9	33420	7.3	16735	9.4	26280	7.4	17170	2.7	1530	2.2	970	2.1	895	2.5	1270	2.3	1055	2.2	970
14,	5.3	8540	7.0	15450	9.5	26750	7.4	17170	8.7	22995	6.4	12930	2.7	1530	2.2	970	2.1	895	2.5	1270	2.3	1055	3.0	2005
15,	6.4	12930	7.1	15875	9.1	24870	13.4	45860	7.9	19355	7.3	16735	2.6	1395	2.2	970	2.3	1055	2.4	1155	2.3	1055	4.0	4250
16,	5.7	10100	8.7	22995	8.0	19800	16.9	69230	8.0	19800	7.7	18475	2.6	1395	2.2	970	2.3	1055	2.4	1155	2.2	970	3.9	4000
17,	6.4	12930	10.7	32460	7.3	16735	14.6	52990	7.8	18915	6.5	13345	2.6	1395	2.2	970	2.4	1155	2.3	1055	2.2	970	3.6	3265
18,	5.8	10500	10.9	33420	6.8	14600	12.4	40640	7.1	15875	6.2	12110	2.6	1395	2.2	970	2.3	1055	2.3	1055	2.2	970	3.9	4000
19,	5.4	8930	10.4	31020	6.4	12930	10.6	31980	6.7	14180	6.8	14600	2.5	1270	2.4	1152	2.3	1055	2.3	1055	2.2	970	3.6	3265
20,	5.6	9710	11.5	36300	6.1	11705	9.5	26750	6.7	14180	6.8	14600	2.5	1270	2.4	1155	2.3	1055	2.2	970	2.2	970	3.0	2005
21,	5.5	9320	17.3	72400	5.8	10500	8.9	23930	6.2	12110	6.9	15025	2.4	1155	2.6	1395	2.2	970	2.2	970	2.2	970	3.1	2185
22,	5.6	9710	17.3	72400	5.6	9710	8.6	22535	5.8	10500	5.3	8540	2.6	1395	2.8	1680	2.2	970	2.2	970	2.2	970	2.9	1840
23,	5.9	10900	15.5	58940	5.3	8540	8.4	21615	5.6	9710	4.9	7100	2.7	1530	2.8	1680	2.2	970	2.2	970	2.2	970	2.9	1840
24,	5.9	10900	14.5	52360	5.1	7800	8.5	22075	5.3	8540	4.6	6050	2.7	1530	2.8	1680	2.3	1055	2.3	1055	2.2	970	3.1	2185
25,	10.3	30540	17.0	70000	5.0	7450	7.7	18475	5.1	7800	4.7	6400	2.7	1530	2.7	1530	2.1	805	2.3	1055	2.2	970	2.9	1840
26,	15.9	61700	17.7	75600	7.6	18040	7.1	15875	4.8	6750	5.1	7800	2.6	1395	2.7	1530	2.2	970	2.3	1055	2.2	970	2.8	1680
27,	14.4	51730	14.6	52990	11.1	34380	6.7	14180	4.6	6050	4.7	6400	2.6	1395	2.7	1530	2.2	970	2.4	1155	2.2	970	2.6	1395
28,	11.4	35820	12.5	41140	11.7	37260	6.4	12930	4.7	6400	4.3	5070	2.6	1395	2.5	1270	2.1	895	2.4	1155	2.4	1155	2.6	1395
29,	8.9	23930	-----	-----	11.1	34380	6.3	12520	4.6	6050	4.2	4780	2.8	1680	2.5	1270	2.2	970	2.4	1155	2.4	1155	2.5	1270
30,	7.6	18040	-----	-----	11.0	33900	8.0	19800	4.5	5710	4.1	4510	2.8	1680	2.4	1155	2.1	895	2.4	1155	2.5	1270	2.2	970
31,	6.9	15025	-----	-----	10.4	31020	-----	-----	4.5	5710	-----	-----	2.7	1530	2.4	1155	-----	-----	2.4	1155	-----	-----	2.2	970

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY, PA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.47	1235	5.45	9125	20.85	105505	6.75	14390	11.00	33900	6.40	12930	3.7	3500	2.3	1055	2.1	895	2.7	1530	2.1	895	4.0	4250
2,	2.57	1360	4.85	6925	24.15	156615	6.55	13555	9.00	24400	6.10	11705	3.6	3265	2.3	1055	2.1	895	2.7	1530	2.1	895	4.0	4250
3,	2.67	1490	5.15	7980	25.95	185200	6.05	11500	9.70	27690	6.00	11300	3.5	3035	2.3	1055	2.1	895	2.7	1530	2.1	895	4.0	4250
4,	2.57	1360	5.35	8735	24.65	164490	5.75	10300	9.60	27220	5.90	10900	3.4	2810	2.3	1055	2.1	895	2.7	1530	2.1	895	3.9	4000
5.	2.27	1030	4.75	6575	21.35	112695	5.45	9125	11.20	34800	5.60	9710	3.3	2590	2.3	1055	2.2	970	2.6	1395	2.5	1270	3.9	4000
6,	2.37	1125	4.85	6925	18.65	83430	5.25	8350	9.80	28160	5.40	8930	3.1	2185	2.3	1055	2.3	1055	2.5	1270	2.5	1270	3.8	3750
7,	2.67	1490	5.65	9905	18.55	82575	5.35	8735	8.30	21155	5.40	8930	3.1	2185	2.2	970	2.3	1055	2.5	1270	2.5	1270	3.6	3265
8,	2.95	1920	4.45	5545	20.75	104185	5.05	7625	7.30	16735	5.60	9710	3.0	2005	2.2	970	2.3	1055	2.4	1155	2.4	1155	3.3	2590
9,	2.95	1920	4.85	6925	18.05	78405	4.95	7275	6.70	14180	6.70	14180	3.0	2005	2.2	970	2.3	1055	2.4	1155	2.3	1055	3.2	2380
10,	3.05	2095	4.85	6925	15.15	56590	4.95	7275	6.60	13760	6.60	13760	3.0	2005	2.3	1055	2.3	1055	2.4	1155	2.6	1395	3.2	2380
11,	3.25	2485	4.55	5880	12.65	41895	4.85	6925	6.40	12930	6.60	13760	2.9	1840	2.3	1055	2.4	1155	2.4	1155	3.0	2005	3.2	2380
12,	3.45	2920	4.45	5545	10.85	33180	4.85	6925	6.10	11705	6.10	11705	2.9	1840	2.3	1055	2.4	1155	2.3	1055	3.7	3500	3.0	2005
13,	3.25	2485	4.35	5225	10.35	30780	4.55	5880	5.80	10500	6.60	13760	2.9	1840	2.3	1055	2.4	1155	2.3	1055	4.7	6400	2.6	1395
14,	3.25	2485	4.25	4925	9.75	27925	4.55	5880	5.50	9320	7.00	15450	2.9	1840	2.3	1055	2.4	1155	2.3	1055	4.5	5710	2.6	1395
15,	3.05	2095	4.15	4645	9.35	26045	4.75	6575	5.20	8160	6.50	13345	2.8	1680	2.3	1055	2.4	1155	2.3	1055	4.3	5070	2.8	1680
16,	2.85	1760	4.15	4645	8.75	23225	4.65	6225	4.90	7100	5.90	10900	2.8	1680	2.2	970	2.3	1055	2.2	970	4.1	4510	2.7	1530
17,	2.95	1920	4.15	4645	8.25	20930	4.45	5545	4.60	6050	5.80	10500	2.8	1680	2.2	970	2.3	1055	2.2	970	3.9	4000	2.6	1395
18,	2.95	1920	5.25	8350	7.85	19135	4.35	5225	4.50	5710	7.70	18475	2.7	1530	2.1	895	2.2	970	2.2	970	3.9	4000	2.6	1395
19,	3.15	2285	4.95	7275	7.35	16955	5.15	7980	4.30	5070	7.00	18040	2.7	1530	2.3	1055	2.2	970	2.2	970	3.7	3500	2.9	1840
20,	3.45	2920	5.15	7980	7.05	15660	5.25	8350	4.20	4780	7.60	18040	2.6	1395	2.2	970	2.2	970	2.1	895	3.6	3265	3.0	2005
21,	3.85	3875	5.65	9905	7.75	18695	5.85	10700	4.20	4780	7.10	15875	‡2.6	1395	2.3	1055	2.2	970	2.2	970	3.5	3035	2.9	1840
22,	13.95	49005	6.05	11500	9.85	28395	6.95	15235	4.20	4780	6.20	12110	2.6	1395	2.3	1055	2.2	970	2.2	970	3.4	2810	2.7	1530
23,	18.65	83430	6.25	12315	10.25	30300	6.80	14600	4.20	4780	5.50	9320	2.5	1270	2.2	970	2.1	895	2.2	970	3.4	2810	2.8	1680
24,	14.95	55270	6.35	12725	9.85	28395	6.20	12110	4.20	4780	5.00	7450	2.5	1270	2.1	895	2.1	895	2.1	895	3.3	2590	3.0	2005
25,	12.15	39420	6.85	14810	9.95	28865	†16.25	64220	4.60	6050	4.60	6050	2.5	1270	2.1	895	2.3	1055	2.1	895	3.3	2590	3.3	2590
26,	10.05	29340	6.95	15235	9.95	28865	19.80	93830	6.80	14600	4.30	5070	2.5	1270	2.1	895	2.2	970	2.1	895	3.3	2590	3.2	2380
27,	8.75	23225	6.05	11500	9.95	28865	15.20	56920	10.80	32940	4.00	4250	2.5	1270	2.1	895	2.2	970	2.1	895	3.7	3500	3.0	2005
28,	7.55	17825	*13.25	45040	9.55	26985	12.10	39180	10.00	29100	4.20	4780	2.4	1155	2.1	895	2.3	1055	2.1	895	4.2	4780	3.6	3265
29,	6.85	14810	------	------	8.55	22305	9.80	28160	8.60	22535	4.30	5070	2.3	1055	2.1	895	2.2	970	2.1	895	4.2	4780	4.0	4250
30,	6.55	13550	------	------	7.75	18695	8.90	23930	7.60	18040	3.90	4000	2.3	1055	2.1	895	2.3	1055	2.1	895	4.1	4510	4.5	5710
31,	5.85	10700	------	------	7.15	16090	------	------	6.80	14600	------	------	2.3	1055	2.1	895	------	------	2.1	895	------	------	4.9	7100

February 19th, river closed.
*Maximum 15.65 at 5 P. M.—59955 second feet. No ice running.
†Maximum 20 feet at 6 P. M.—95700 second feet. February 22nd river open.
‡First reading of Mott gage.
Dec. 9th River closed at Market Street Bridge. Dec. 31st, river open.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY, PA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	* G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	7.4	17170	8.0	......	8.5	22075	11.8	37740	5.65	9905	3.45	2922	3.25	2485	2.45	1212	4.15	4645	3.45	2922	4.94	7240	6.14	11870
2,	10.8	32940	6.4	......	6.9	15025	9.9	28630	5.70	10100	3.20	2380	3.15	2282	2.45	1212	3.75	3625	4.05	4380	4.84	6890	6.14	11870
3,	9.0	24400	5.9	......	6.2	12110	8.6	22525	5.75	10300	3.15	2282	3.15	2282	2.45	1212	3.45	2922	5.35	8735	4.84	6890	5.64	9866
4,	14.0	49300	6.4	......	5.5	9320	7.8	18915	6.00	13700	3.50	3035	3.05	2098	2.35	1105	3.15	2282	5.25	8350	4.94	7240	5.24	8312
5,	12.0	38700	6.2	......	4.9	7100	7.6	18040	6.25	12315	3.45	2922	2.90	1840	2.30	1055	2.95	1922	5.05	7625	4.94	7240	5.04	7590
6,	10.0	29100	8.0	......	4.8	6750	9.5	26750	5.75	10300	3.35	2700	2.75	1605	2.25	1012	2.95	1922	4.55	5880	4.74	6540	4.84	6890
7,	8.1	20250	8.9	......	4.5	5710	13.6	46980	5.30	8740	3.30	2590	2.75	1605	2.35	1105	3.55	3150	4.55	5880	4.74	6540	4.54	5846
8,	6.8	14600	7.7	......	4.2	4780	16.4	65340	5.05	7625	3.25	2485	2.95	1922	2.25	1012	3.35	2700	4.55	5880	4.94	7240	4.44	5512
9,	7.0	15450	7.5	......	4.3	5070	16.1	63190	4.80	6750	4.40	5380	2.85	1760	2.25	1012	3.05	2098	4.95	7275	5.14	7944	4.44	5512
10,	6.8	14600	7.3	......	4.2	4780	13.9	48710	4.55	5880	4.15	4645	2.80	1680	2.30	1055	5.35	8735	5.15	7980	5.14	7944	4.34	5194
11,	6.1	11705	6.8	......	4.9	7100	12.9	43180	4.45	5545	3.95	4125	2.75	1605	2.25	1012	4.65	6225	4.85	6925	5.04	7590	4.54	5846
12,	5.8	10500	6.3	......	6.9	15025	11.3	35340	4.40	5380	5.00	7450	2.75	1605	2.15	932	5.35	8735	4.85	6925	4.84	6890	5.04	7590
13,	6.3	12520	5.7	......	7.6	18040	10.2	30060	4.15	4645	4.75	6575	2.65	1462	2.15	932	5.05	7625	4.95	7275	4.94	7240	5.24	8312
14,	8.5	22075	4.8	......	8.7	22905	9.5	26750	4.00	4250	8.10	20250	2.65	1462	2.15	932	4.55	5880	4.85	6925	4.94	7240	5.34	8696
15,	12.0	38700	4.2	......	9.2	25340	10.0	29100	3.85	3875	9.35	26045	2.70	1530	2.20	970	4.15	4645	4.55	5880	5.34	8696	7.84	19090
16,	13.2	44770	3.6	......	10.1	29580	11.1	34280	3.75	3625	8.45	21845	2.65	1462	2.15	932	4.05	4380	4.35	5225	5.34	8696	7.44	17340
17,	10.5	31500	3.9	......	8.7	22905	10.9	33420	3.70	3500	7.30	16735	2.65	1462	2.05	870	3.75	3625	4.05	4380	5.14	7944	9.04	24590
18,	8.8	23460	4.2	......	7.5	17605	9.7	27690	3.65	3382	6.25	12315	2.55	1332	2.05	870	3.45	2922	4.15	4645	5.24	8312	9.34	26000
19,	6.8	14600	4.6	......	7.0	15450	8.7	22995	3.60	3265	5.90	10900	2.65	1462	2.05	870	3.45	2922	6.35	12725	5.54	9476	9.04	24590
20,	6.2	12110	7.5	......	6.4	12930	8.3	21155	3.55	3150	5.35	8735	2.80	1680	2.30	1055	3.25	2485	6.35	12725	6.04	11460	8.04	19980
21,	6.0	11300	10.0	......	6.1	11705	9.9	28630	3.55	3150	4.85	6925	2.85	1760	2.25	1012	3.15	2282	6.95	15238	7.44	17340	7.14	16050
22,	5.8	10500	10.4	......	6.3	12520	10.2	30060	4.00	4250	4.50	5710	2.85	1760	2.25	1012	3.05	2098	6.85	14812	6.84	14570	6.44	13100
23,	5.1	7800	9.9	......	7.3	16735	10.3	30540	3.65	3382	4.15	4645	2.75	1605	2.25	1012	3.05	2098	6.95	15238	6.24	12270	6.34	12680
24,	5.1	7800	9.0	......	8.9	23930	10.4	31020	3.50	3035	4.10	4510	2.75	1605	2.15	932	2.95	1922	7.85	19135	5.84	10660	8.24	20880
25,	5.2	8160	8.6	......	8.3	21155	9.3	25810	3.55	3150	3.95	4125	2.70	1530	2.20	970	2.75	1605	7.95	19578	5.64	9866	10.04	29290
26,	5.4	8930	8.8	......	7.6	18040	8.3	21155	3.45	2922	3.65	3382	2.45	1212	2.45	1212	2.75	1605	6.75	14390	5.54	9476	9.44	26470
27,	5.0	7450	8.8	......	7.8	18915	7.6	18040	4.90	7100	3.60	3265	2.45	1212	2.45	1212	2.75	1605	5.95	11100	5.54	9476	8.44	21800
28,	5.0	7450	10.7	......	13.7	47550	6.0	11300	4.55	5880	3.55	3150	2.55	1332	2.45	1212	2.75	1605	5.55	9515	5.44	9086	8.04	19980
29,	9.9	28630	......	......	19.2	88310	6.0	11300	4.10	4510	3.50	3035	2.55	1332	2.15	[illegible]	2.95	1922	5.45	9125	5.54	9476	7.64	18210
30,	10.9	33420	......	......	17.2	71600	5.4	8930	3.75	3625	3.35	2700	2.50	1270	2.00	1000	3.45	2922	5.35	8735	5.54	9476	6.44	13100
31,	9.0	24400	......	......	14.2	50500	......	......	3.50	3035		......	2.45	1212	2.55	[illegible]			5.15	7980	-		6.14	11870

*Readings taken to surface of ice. Discharge estimated from Danville record. See "Monthly Discharge" sheet.

ESTIMATED MONTHLY DISCHARGE OF NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY,

(Drainage Area 9,995 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1899.					
April,	51100	13760	29119	2.910	3.247
May,	12930	6400	8975	0.898	1.036
June,	9320	1840	3413	0.341	0.380
July,	3265	1395	1983	0.198	0.229
August,	6050	1055	1722	0.172	0.198
September,	2185	970	1238	0.124	0.138
October,	1395	970	1177	0.118	0.136
November,*	21155	1270	7237	0.724	0.808
December,	27220	2810	12930	1.290	1.487
1900.					
January,	68805	7800	18739	1.870	2.156
February,	63120	12520	28434	2.840	2.957
March,	76000	10100	24071	2.410	2.778
April,	40890	13345	26509	2.650	2.957
May	11705	3500	6807	0.681	0.785
June,	6750	2185	3488	0.349	0.389
July,	4250	1530	2320	0.232	0.267
August,	2380	1155	1680	0.168	0.194
September,	2185	895	1333	0.133	0.148
October,	1840	895	1227	0.123	0.142
November,	104185	1270	10944	1.090	1.216
December,	50500	11705	27508	2.750	3.170
The year,	104185	895	12755	1.274	17.159
1901					
January,	52360	15450	29160	2.920	3.366
February,	22535	12110	16800	1.680	1.749
March,	113440	10100	35158	3.520	4.058
April,	78810	19355	39333	3.930	4.385
May,	74400	10500	21855	2.190	2.525
June,	52675	4780	15969	1.590	1.774
July,	5710	1840	3048	0.305	0.351
August,	31500	2005	7557	0.750	0.865
September,	10500	2185	4312	0.431	0.481
October,	5380	2185	3544	0.354	0.408
November,	24870	1840	5381	0.538	0.600
December,	197500	-----------	34433	3.443	3.969
The year,	197500	1840	18046	1.804	24.531
1902.					
January,	67630	11705	27120	2.710	3.124
February,	49480	12930	23349	2.330	2.426
March,	260475	19800	71608	7.160	8.255
April,	61600	6400	22172	2.220	2.477
May,	7800	3035	4908	0.491	0.566
June,	7800	3750	4996	0.500	0.558
July,	61700	7800	29352	2.940	3.389
August,	34380	3265	10249	1.020	1.176
September,	32460	2005	4945	0.495	0.553
October,	38940	6050	15311	1.530	1.764
November,	26750	4510	8615	0.862	0.962
December,	75200	7450	26340	2.630	3.032
The year,	260475	2005	20747	2.074	28.282

ESTIMATED MONTHLY DISCHARGE OF NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY,

(Drainage Area 9,995 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1903.					
January,	74800	14600	29732	2.970	3.424
February,	84560	17170	35045	3.500	3.645
March,	110000	21155	53784	5.380	6.203
April,	50500	7100	23842	2.380	2.655
May,	6750	2005	3380	0.338	0.390
June,	31020	1840	10475	1.050	1.171
July,	26280	2810	8090	0.809	0.933
August,	90150	3500	13314	1.330	1.533
September,	48130	3265	11180	1.120	1.250
October,	111215	3265	27826	2.780	3.205
November,	47550	4780	13334	1.330	1.484
December,	31020	3500	13865	1.390	1.603
The year,	111215	1840	20322	2.032	27.496
1904.					
January,	79630	9710	22262	2.230	2.571
February,	87400	18150	36900	3.700	3.990
March,	136920	16470	54291	5.430	6.260
April,	63850	15025	31492	3.150	3.514
May,	36300	6750	16144	1.610	1.856
June,	36780	2810	11427	1.140	1.272
July,	5710	2590	3608	0.361	0.416
August,	12930	2380	5294	0.529	0.610
September,	9320	2185	4167	0.417	0.465
October,	30060	3750	11542	1.160	1.337
November,	9320	4780	6103	0.610	0.681
December,	48420	2185	7644	0.765	0.882
The year,	136920	2185	17573	1.756	23.854
1905.					
January,	52990	8160	26238	2.620	3.021
February,	14600	3750	7997	0.800	0.833
March,	144800	2590	41243	4.120	4.750
April,	56920	10100	24822	2.480	2.767
May,	9320	3500	6017	0.602	0.694
June,	45310	2810	10915	1.090	1.216
July,	19800	2810	5589	0.559	0.645
August,	10500	2590	5600	0.560	0.646
September,	34860	2590	13178	1.320	1.473
October,	22075	3500	8391	0.839	0.967
November,	9710	3265	5632	0.563	0.628
December,	62400	6050	20320	2.030	2.340
The year,	144800	2590	14662	1.465	19.980
1906.					
January	54280	7100	15784	1.580	1.822
February,	31020	4510	11074	1.110	1.156
March,	73200	4250	18575	1.860	2.144
April,	75600	10900	36610	3.660	4.083
May,	49300	4250	12373	1.240	1.430
June,	30060	5380	14511	1.450	1.618
July,	22705	2380	6687	0.669	0.771
August,	7450	1680	3663	0.366	0.422
September,	4510	1270	1910	0.191	0.213
October,	22535	1155	5308	0.531	0.612
November,	26280	4000	10429	1.040	1.160
December,	28630	6750	13628	1.363	1.571
The year,	75600	1155	12546	1.255	17.002

ESTIMATED MONTHLY DISCHARGE OF NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY.

(Drainage Area 9,995 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a 1907.					
January,	58260	13750	33218	3.320	3.828
February,					.800
March,	62400	2185	23104	2.310	2.663
April,	52990	8540	17772	1.780	1.986
May,	27690	5380	13736	1.370	1.579
June,	8160	2380	4590	0.459	0.512
July,	8160	2590	4136	0.414	0.477
August,	2380	970	1393	0.139	0.160
September,	17170	970	4993	0.500	0.558
October,	24870	3750	11043	1.100	1.268
November,	51730	7800	18313	1.830	2.042
December,	83860	5710	30141	3.010	3.470
The year,	83860	970			19.343
b 1908.					
January,	38460		14233	1.423	1.641
February,	119540	10700	24875	2.490	2.685
March,	106890	11100	44104	4.410	5.084
April,	54610	13760	24687	2.470	2.756
May,	60310	8160	25181	2.520	2.905
June,	12110	2095	4272	0.427	0.477
July,	9865	1450	2429	0.243	0.280
August,	1905	1005	1304	0.130	0.150
September,	1095	830	880	0.088	0.098
October,	1745	865	1000	0.100	0.115
November	1470	1095	1295	0.130	0.145
December,	1450	865	1207	0.121	0.139
The year,	119540	830	12124	1.212	16.475
1909.					
January,	61700	970	15846	1.580	1.822
February,	75000	15450	36050	3.610	3.759
March,	39180	7450	20941	2.090	2.410
April,	69200	12520	26440	2.640	2.945
May,	125860	5710	27678	2.770	3.194
June,	23460	4000	10242	1.020	1.138
July,	3750	1155	1755	0.176	0.203
August,	1680	970	1237	0.124	0.143
September,	1155	895	994	0.099	0.111
October,	1270	895	1038	0.104	0.120
November,	1270	970	1049	0.105	0.117
December,	4250	970	1837	0.184	0.212
The year,	125860	895	12090	1.209	16.174

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a February—River affected by ice. Run-off estimated on basis of yield of other Susquehanna basin streams.

b January 9-16; 28-31, ice affected gage. Estimated on basis of Danville.

ESTIMATED MONTHLY DISCHARGE OF NORTH BRANCH SUSQUEHANNA RIVER, AT WILKES-BARRE, LUZERNE COUNTY.

(Drainage Area 9,995 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1910.					
January	83430	1030	12218	1.222	1.409
February,	59955	4645	9561	.957	.997
March,	185200	15660	53609	5.364	6.184
April,	95700	5225	17418	1.743	1.944
May,	34860	4780	15496	1.550	1.787
June,	18475	4000	11000	1.101	1.228
July,	3500	1055	1803	.181	.209
August,	1055	895	989	.099	.114
September,	1155	895	1014	.101	.113
October,	1530	895	1088	.109	.126
November,	6400	895	2898	.290	.324
December,	7100	1395	2790	.279	.322
The year,	185200	895	10822	12.906	14.757
a 1911.					
January,	49300	7450	20461	2.05	2.363
February,	------------	------------	7996	.80	.833
March,	88310	4780	21314	2.13	2.456
April,	65340	8930	29920	2.99	3.336
May,	13760	2922	5803	0.58	0.669
June,	26045	2282	6925	0.69	0.770
July,	2485	1212	1628	0.16	0.184
August,	4000	870	1238	0.12	0.138
September,	8735	1605	3437	0.34	0.379
October,	19578	2922	9141	0.91	1.049
November,	17340	6540	8905	0.89	0.993
December,	29290	5194	14320	1.43	1.649
The year,	88310	870	10924	1.09	14.819

a February discharge estimated from Danville record on account of ice conditions.

SUSQUEHANNA BASIN—STATION NO. 7.

NORTH BRANCH SUSQUEHANNA RIVER AT DANVILLE.

DESCRIPTION OF STATION.

This station was established by the United States Geological Survey March 25th, 1899, at Mill Street bridge, near Pennsylvania Railroad Station at South Danville, 52 miles below Wilkes-Barre, and about 11 miles above the junction of the North Branch with the West Branch of the Susquehanna river at Northumberland. On April 1,1907, this station was taken over by the Water Supply Commission of Pennsylvania, and has since been maintained and operated by this Commission.

The channel is straight for one-half mile above and below the station. The right bank is liable to overflow in extreme freshets, while the left bank is high and does not overflow. The bed of the river is permanent, consisting of rocks and gravel.

Discharge measurements are taken from the downstream side of the bridge; the initial point for soundings being the downstream corner of the right abutment, Danville side.

On March 25th, 1899, a standard chain gage was attached to the bridge, but on March 9, 1904, the bridge and gage were carried away in an ice freshet and, from that date until March 24, 1905, observations were made from temporary gages and were constantly liable to error. On March 24, 1905, a new chain gage was attached to the upstream handrail of the new bridge in the first span from the right bank. On July 8th, 1905, the gage was moved and attached in the same position on the downstream side of the bridge. In both positions it was referred to the datum of former gages. The length of chain from the bottom of weight to center of marker is 44.67 feet; the elevation of zero being arbitrary datum. Bench mark No. 1 is on the extreme south end of the stone door sill at the east entrance to the City Filtration Plant, elevation 31.70 feet above zero of gage; bench mark No. 2 is a point on the face of the first course of the right abutment, located three inches from the top of course, and 2.65 feet from the downstream side, elevation 14.05 feet above gage datum.

During the period January 1, 1904 to March 22, 1905, the daily gage heights and discharges have not been published, due to the inaccuracy of the gage heights obtained from the temporary gages which were in operation through most of this period.

Since the establishment of this station, 31 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF NORTH BRANCH SUSQUEHANNA RIVER, AT DANVILLE, MONTOUR COUNTY, PENNA.

(Drainage Area, 11,255 Square Miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1899.							
1	Mar. 25,	Paul,	------	10971	4.34	10.0	47646	
2	June 8,	do.	------	2235	1.76	3.00	3927	
3	July 27,	do.	------	1607	1.41	2.40	2272	
4	Sept. 16,	do.	------	1265	1.13	2.00	1427	
5	Oct. 17,	do.	------	1123	1.03	1.90	1163	
	1900.							
6	May 20,	Paul,	------	3790	2.76	4.60	10515	
7	Sept. 25,	do.	------	798	1.03	1.60	822	
	1901.							
8	Aug. 19,	Paul,	------	7631	3.63	7.50	27714	
9	Oct. 27,	do.	------	2051	2.20	3.10	4510	
	1902.							
10	April 22,	Paul,	------	4541	3.17	5.20	14393	
11	Sept. 19,	do.	------	1993	1.56	2.75	3115	
	1903.							
12	Mar. 5,	Murphy,	------	10413	3.72	9.82	39600	
13	April 9,	do.	------	8848	3.66	8.60	33000	
14	May 9,	do.	------	2688	1.85	3.44	4963	
15	Oct. 8,	Sawyer,	------	2845	2.01	3.46	5728	
	*1904.							
	1905.							
16	Mar. 23,	Hoyt,	1272	15290	5.96	14.50	91160	
17	Mar. 24,	Comstock,	1272	14300	5.89	13.72	84240	
18	Mar. 26,	Harley & Comstock,	1272	20530	7.07	18.62	145100	
19	Mar. 27,	Comstock,	1272	19780	6.94	18.02	137300	
20	Mar. 28,	Harley,	1272	18280	6.56	16.85	119900	
21	Mar. 30,	do.	1272	15420	5.94	14.63	91630	
22	Mar. 31,	Harley,	1272	13620	5.67	13.21	77180	
23	April 1,	do.	1272	12050	5.32	11.97	64110	
24	April 3,	do.	1264	9324	4.91	9.83	45790	
25	July 8,	Grover & Biggi,	870	2893	2.67	3.90	7720	
	1906.							
26	June 30,	U. S. G. A.,	870	3560	2.63	4.23	9360	
	1907.							
27	Oct. 15,	Grant,	980	4460	3.30	5.67	14700	Measurement plots 10% too small.
	1908.							
28	Sept. 15,	Langenheim,	872	1459	0.67	1.74	981	
	1909.							
29	May 7,	Grant,	1243	9149	4.40	9.41	40220	
30	June 25,	do.	842	3094	2.72	3.98	8426	
	1912.							
31	May 20,	Reckord & Boehringer,	1152	6584	3.89	7.55	25612	Surface msmt.

*No measurements in 1904. Bridge carried away by ice in March.

DISCHARGE TABLE FOR NORTH BRANCH SUSQUEHANNA RIVER, AT DANVILLE, MONTOUR COUNTY. FROM MARCH 25, 1899, TO DECEMBER 31, 1911

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.50	785	.70	21245	.70	61500	.90	120550	22.00	209500
.60	830	.80	21850	.80	62490	17.00	121900	.10	211750
.70	915	.90	22470	.90	63490	.10	123270	.20	214000
.80	1045	7.00	23100	12.00	64500	.20	124660	.30	216260
.90	1200	.10	23740	.10	65520	.30	126060	.40	218530
2.00	1390	.20	24385	.20	66550	.40	127470	.50	220810
.10	1590	.30	25040	.30	67580	.50	128890	.60	223110
.20	1800	.40	25700	.40	68620	.60	130330	.70	225430
.30	2030	.50	26365	.50	69660	.70	131780	.80	227770
.40	2270	.60	27035	.60	70700	.80	133240	.90	230130
.50	2520	.70	27715	.70	71740	.90	134710	23.00	232500
.60	2775	.80	28400	.80	72790	18.00	136200	.10	234900
.70	3040	.90	29095	.90	73840	.10	137690	.20	237300
.80	3330	8.00	29800	13.00	74900	.20	139180	.30	239700
.90	3630	.10	30525	.10	75960	.30	140670	.40	242100
3.00	3930	.20	31260	.20	77020	.40	142160	.50	244500
.10	4255	.30	32000	.30	78080	.50	143660	.60	246900
.20	4600	.40	32750	.40	79140	.60	145160	.70	249300
.30	4960	.50	33500	.50	80200	.70	146670	.80	251700
.40	5335	.60	34250	.60	81260	.80	148190	.90	254100
.50	5740	.70	35000	.70	82320	.90	149730	24.00	256500
.60	6195	.80	35750	.80	83380	19.00	151300	.10	258900
.70	6650	.90	36520	.90	84440	.10	152900	.20	261300
.80	7110	9.00	37300	14.00	85500	.20	154540	.30	263700
.90	7575	.10	38090	.10	86560	.30	156220	.40	266100
4.00	8040	.20	38900	.20	87620	.40	157930	.50	268500
.10	8505	.30	39715	.30	88690	.50	159680	.60	270900
.20	8970	.40	40550	.40	89760	.60	161470	.70	273300
.30	9440	.50	41400	.50	90840	.70	163300	.80	275700
.40	9910	.60	42250	.60	91940	.80	165170	.90	278100
.50	10375	.70	43100	.70	93050	.90	167080	25.00	280500
.60	10840	.80	43950	.80	94180	20.00	169000	.10	282900
.70	11305	.90	44820	.90	95330	.10	170920	.20	285300
.80	11770	10.00	45700	15.00	96500	.20	172840	.30	287700
.90	12235	.10	46590	.10	97690	.30	174760	.40	290100
5.00	12700	.20	47490	.20	98890	.40	176680	.50	292500
.10	13160	.30	48390	.30	100110	.50	178600	.60	294900
.20	13625	.40	49300	.40	101350	.60	180520	.70	297300
.30	14100	.50	50210	.50	102600	.70	182440	.80	299700
.40	14580	.60	51120	.60	103860	.80	184380	.90	302100
.50	15060	.70	52030	.70	105120	.90	186330	26.00	304500
.60	15550	.80	52950	.80	106380	21.00	188300	.10	306900
.70	16040	.90	53870	.90	107640	.10	190300	.20	309300
.80	16530	11.00	54800	16.00	108900	.20	192330	.30	311700
.90	17010	.10	55730	.10	110160	.30	194390	.40	314100
6.00	17500	.20	56670	.20	111420	.40	196480	.50	316500
.10	17990	.30	57620	.30	112690	.50	198590	.60	318900
.20	18495	.40	58580	.40	113970	.60	200720	.70	321300
.30	19015	.50	59550	.50	115270	.70	202870	.80	323700
.40	19550	.60	60520	.60	116570	.80	205050	.90	326100
.50	20095			.70	117890	.90	207260	27.00	328500
.60	20660			.80	119220				

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT DANVILLE, MONTOUR COUNTY, PENNA.

1899.	MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,			6.95	22785	4.80	11770	3.30	4960	3.20	4600	2.20	1800	2.80	3330	2.10	1590	2.10	1590	3.10	4255
2,			6.80	21850	4.65	11070	3.40	5335	3.00	3930	2.20	1800	2.60	2775	2.10	1590	2.60	2775	3.00	3930
3,			6.35	19280	4.60	10840	3.70	6650	2.80	3330	2.60	2775	2.50	2520	2.10	1590	2.60	2775	3.00	3930
4,			6.00	17500	4.60	10840	3.60	6195	2.70	3040	2.30	2030	2.50	2520	2.10	1590	6.10	17990	3.00	3930
5,			5.65	15795	4.60	10840	3.50	5740	2.60	2775	2.20	1800	2.30	2030	2.00	1390	5.40	14580	3.00	3930
6,			5.50	15060	4.55	10605	3.30	4960	2.60	2775	2.20	1800	2.20	1800	2.00	1390	5.70	16040	2.90	3630
7,			5.65	15795	4.35	9675	3.20	4600	2.60	2775	2.50	2520	2.20	1800	2.00	1390	5.20	13625	3.10	4255
8,			6.90	22470	4.15	8735	3.00	3930	2.50	2520	2.30	2030	2.10	1590	2.00	1390	4.70	11305	3.10	4255
9,			10.50	50210	3.80	7110	3.00	3930	2.50	2520	2.20	1800	2.40	2270	2.10	1590	4.30	9440	3.10	4255
10,			11.60	60520	3.70	6650	2.90	3630	2.50	2520	2.20	1800	2.20	1800	2.10	1590	3.90	7575	3.00	3930
11,			10.45	49755	3.70	6650	2.90	3630	2.50	2520	2.60	2775	2.10	1590	2.00	1390	7.30	25040	3.00	3930
12,			9.15	38495	3.75	6880	2.90	3630	2.40	2270	2.30	2030	2.20	1800	2.00	1390	3.90	7575	3.10	4255
13,			8.95	36910	3.80	7110	2.70	3040	2.60	2775	2.40	2270	2.10	1590	2.00	1390	3.70	6650	4.20	8970
14,			10.75	52490	3.70	6650	2.70	3040	2.70	3040	2.30	2030	2.10	1590	1.90	1200	4.00	8040	6.80	21850
15,			11.55	60035	3.70	6650	2.60	2775	2.60	2775	2.30	2030	2.10	1590	1.90	1200	3.90	7575	7.80	28400
16,			11.40	58580	3.60	6195	2.60	2775	2.80	3330	2.30	2030	2.00	1390	1.90	1200	3.80	7110	7.60	27035
17,			10.85	53410	3.60	6195	2.60	2775	2.80	3330	2.30	2030	1.90	1200	1.90	1200	3.90	7575	6.70	21245
18,			10.05	46145	3.70	6650	2.60	2775	2.70	3040	2.30	2030	1.90	1200	1.90	1200	4.30	9440	6.10	17990
19,			9.05	37695	3.60	6195	2.60	2775	2.70	3040	2.30	2030	1.80	1045	1.90	1200	4.40	9910	5.70	16040
20,			8.25	31630	3.60	6195	2.50	2520	2.50	2520	2.20	1800	1.80	1045	1.90	1200	4.30	9440	5.40	14580
21,			7.75	28055	3.60	6195	2.50	2520	2.50	2520	2.10	1590	1.90	1200	1.90	1200	4.10	8505	5.60	15550
22,			7.35	25370	3.80	7110	2.50	2520	2.50	2520	2.10	1590	1.90	1200	1.90	1200	3.80	7110	6.90	22470
23,			7.05	23420	3.80	7110	2.50	2520	2.50	2520	2.10	1590	1.80	1045	1.90	1200	3.90	7575	6.30	19015
24,			6.65	20950	3.80	7110	2.50	2520	2.50	2520	2.10	1590	1.80	1045	1.90	1200	3.60	6195	6.30	19015
25,	10.00	45700	6.20	18495	3.80	7110	2.50	2520	2.50	2520	2.00	1390	1.80	1045	1.90	1200	3.40	5335	6.50	20095
26,	9.25	39305	5.85	16770	3.70	6650	2.70	3040	2.40	2270	2.00	1390	1.90	1200	1.90	1200	3.40	5335	7.10	23740
27,	8.10	30525	5.70	16040	3.60	6195	2.60	2775	2.40	2270	2.00	1390	1.90	1200	1.90	1200	3.30	4960	6.90	22470
28,	7.35	25370	5.65	15795	3.50	5740	2.60	2775	2.40	2270	2.30	2030	1.80	1045	1.80	1045	3.20	4600	6.40	19550
29,	7.30	25040	5.35	14340	3.30	4960	2.90	3630	2.40	2270	2.20	1800	1.90	1200	1.90	1200	3.10	4255	5.80	16530
30,	7.55	26700	5.10	13160	3.20	4600	3.20	4600	2.40	2270	3.50	5740	2.10	1590	1.90	1200	3.10	4255	5.00	12700
31,	7.45	26030			3.30	4960			2.30	2030	3.20	4600			1.90	1200				

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT DANVILLE, MONTOUR COUNTY, PENNA.

1900.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	*	------	*	------	7.55	26700	5.60	15550	5.35	14340	3.00	3930	2.30	2030	2.40	2270	2.20	1800	1.70	915	2.00	1390	8.75	35375
2,	*	------	*	------	15.25	99500	5.80	16530	5.05	12930	2.90	3630	2.30	2030	2.40	2270	2.20	1800	1.70	915	2.00	1390	7.15	24060
3,	*	------	*	------	13.10	75960	6.75	21545	4.80	11770	2.90	3630	2.30	2030	2.30	2030	2.20	1800	1.70	915	2.00	1390	5.90	17010
4,	*	------	*	------	10.65	51575	8.40	32750	4.55	10605	3.50	5740	2.20	1800	2.20	1800	2.20	1800	1.70	915	2.00	1390	5.50	15060
5,	*	------	*	------	9.25	39305	9.30	39715	4.40	9910	3.30	4960	2.20	1800	2.20	1800	2.20	1800	1.70	915	2.00	1390	7.10	23740
6,	*	------	*	------	7.10	23740	8.45	33125	4.25	9205	3.10	4255	2.30	2030	2.10	1590	2.10	1590	1.70	915	2.00	1390	8.80	35750
7,	*	------	*	------	7.10	23740	7.40	25700	4.15	8735	3.00	3930	2.70	3040	2.50	2520	2.10	1590	1.70	915	2.00	1390	9.65	42675
8,	*	------	*	------	7.30	25040	8.70	35000	4.05	8270	2.90	3630	2.90	3630	2.20	1800	2.00	1390	1.70	915	2.00	1390	8.55	33875
9,	*	------	9.70	43100	6.85	22160	9.75	43525	4.00	8040	2.90	3630	2.90	3630	2.10	1590	1.80	1045	1.70	915	2.00	1390	7.50	26365
10,	*	------	9.90	44820	6.75	21545	9.45	40975	3.95	7805	2.90	3630	2.70	3040	2.10	1590	1.90	1200	1.70	915	2.00	1390	6.85	22160
11,	*	------	7.60	27035	7.50	26365	8.25	31630	3.85	7340	3.10	4255	2.50	2520	2.00	1390	1.80	1045	1.70	915	2.10	1590	6.30	19015
12,	*	------	7.80	28400	7.20	24385	7.10	23740	3.90	7575	3.10	4255	2.50	2520	2.00	1390	1.80	1045	1.70	915	2.10	1590	5.55	15305
13,	*	------	9.40	40550	6.40	19550	6.30	19015	4.10	8505	3.30	4960	2.40	2270	1.90	1200	1.80	1045	1.70	915	2.20	1800	5.20	13625
14,	*	------	9.60	42250	5.65	15795	6.10	17990	4.20	8970	3.30	4960	2.30	2030	2.00	1390	1.80	1045	1.70	915	2.40	2270	5.00	12700
15,	*	------	11.20	56670	5.20	13625	6.30	19015	4.00	8040	3.90	7575	2.30	2030	2.00	1390	1.80	1045	1.80	1045	2.40	2270	5.00	12700
16,	*	------	10.40	49300	4.90	12235	6.65	20950	4.00	8040	3.50	5740	2.30	2030	1.90	1200	1.80	1045	1.80	1045	2.60	2775	6.80	21850
17,	*	------	8.30	32000	4.70	11305	6.35	19280	3.80	7110	3.20	4600	2.30	2030	1.90	1200	1.70	915	1.80	1045	2.50	2520	*	------
18,	*	------	7.30	25040	4.90	12235	7.00	23100	3.90	7575	3.00	3930	2.30	2030	1.90	1200	1.70	915	1.80	1045	2.50	2520	*	------
19,	*	------	5.70	16040	5.05	12930	9.75	43525	3.90	7575	3.00	3930	2.30	2030	1.80	1045	1.70	915	1.80	1045	2.50	2520	*	------
20,	*	------	5.00	12700	5.10	13160	10.55	50665	4.40	9910	2.90	3630	2.30	2030	1.80	1045	1.70	915	1.80	1045	2.50	2520	*	------
21,	9.40	40550	4.70	11305	7.95	29145	9.85	44385	4.40	9910	2.80	3330	2.20	1800	1.90	1200	1.70	915	1.70	915	2.50	2520	*	------
22,	12.70	71740	5.95	17255	8.80	35750	8.95	36910	4.10	8505	2.70	3040	2.40	2270	1.90	1200	1.70	915	1.70	915	2.50	2520	*	------
23,	11.95	63995	12.15	66035	7.95	29445	8.10	30525	3.90	7575	2.60	2775	2.30	2030	1.80	1045	1.60	830	1.90	1200	2.60	2775	*	------
24,	9.70	43100	13.50	80200	7.40	25700	8.35	32375	3.70	6650	2.60	2775	2.20	1800	1.80	1045	1.60	830	2.10	1590	2.70	3040	*	------
25,	7.80	28400	11.05	55265	7.40	25700	9.30	39715	3.60	6195	2.70	3040	2.10	1590	2.30	2030	1.60	830	2.30	2030	2.90	3630	*	------
26,	6.80	21850	8.95	36910	7.65	27375	8.40	32750	3.60	6195	2.60	2775	2.30	2030	2.10	1590	1.70	915	2.20	1800	3.90	7575	7.05	23420
27,	6.45	19820	6.85	22160	6.95	22785	7.40	25700	3.40	5335	2.50	2520	3.00	3930	2.20	1800	1.70	915	2.10	1590	8.45	33125	8.60	34250
28,	6.30	19015	5.45	14820	6.50	20095	6.65	20950	3.20	4600	2.50	2520	2.80	3330	2.10	1590	1.70	915	2.10	1590	16.60	116570	7.55	26700
29,	5.80	16530	------	------	5.85	16770	6.10	17990	3.20	4600	2.40	2270	2.60	2775	2.00	1390	1.70	915	2.10	1590	12.65	71220	6.95	22785
30,	5.80	16530	------	------	5.90	17010	5.65	15795	3.10	4255	2.40	2270	2.40	2270	2.00	1300	1.70	915	2.00	1390	10.20	47490	6.55	20375
31,	*	------	------	------	5.65	15795	------	------	3.00	3930	------	------	2.40	2270	2.00	1390	------	------	2.00	1390	------	------	6.30	19015

*Frozen.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT DANVILLE, MONTOUR COUNTY, PENNA.

1901. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.70	16040	*	------	*	------	8.50	33500	6.65	20950	13.60	81260	3.70	6650	3.30	4960	4.60	10840	3.50	5740	2.90	3630	4.10	8505
2,	8.60	34270	*	------	*	------	7.65	27375	6.10	17990	9.05	37695	3.70	6650	3.00	3930	5.10	13160	3.50	5740	2.90	3630	3.90	7575
3,	*	------	*	------	*	------	7.20	24385	6.50	20095	9.65	42675	3.40	5335	2.70	3040	4.90	12235	3.85	7340	2.80	3330	3.90	7575
4,	*	------	*	------	*	------	7.60	27035	7.60	27035	9.15	38495	3.20	4600	2.60	2775	4.90	12235	4.05	8270	2.80	3330	4.55	10605
5,	*	------	*	------	*	------	8.65	34325	7.35	25370	8.30	32000	3.10	4255	2.60	2775	4.30	9440	3.85	7340	2.80	3330	5.95	17255
6,	*	------	*	------	*	------	9.40	40550	6.65	20950	7.30	25040	3.10	4255	2.60	2775	4.25	9205	3.70	6650	2.70	3040	7.90	29095
7,	*	------	*	------	*	------	8.60	34250	6.05	17745	6.80	21850	3.10	4255	2.70	3040	3.95	7805	3.50	5740	2.70	3040	a8.30	32000
8,	*	------	*	------	*	------	8.55	33875	5.35	14340	7.30	25040	3.60	6195	2.90	3630	3.70	6650	3.30	4960	2.60	2775	a8.70	35000
9,	*	------	*	------	*	------	7.80	28400	5.30	14100	7.60	27035	3.50	5740	3.10	4255	3.50	5740	3.20	4600	2.60	2775	a9.10	38090
10,	*	------	*	------	*	------	7.45	26030	6.50	20095	7.55	26700	3.40	5335	2.90	3630	3.35	5145	3.20	4600	2.60	2775	9.55	41825
11,	*	------	*	------	*	------	7.10	23740	5.00	12700	7.00	23100	3.30	4900	3.50	5740	3.25	4780	3.10	4255	2.60	2775	9.80	43950
12,	*	------	*	------	12.00	64500	6.75	21545	5.70	16040	6.40	19550	3.30	4960	3.30	4960	3.10	4255	3.00	3930	2.60	2775	10.05	46145
13,	*	------	*	------	11.15	56200	6.50	20095	6.60	20660	5.60	15550	3.20	4600	3.00	3930	3.00	3930	2.90	3630	2.80	3330	8.90	36520
14,	*	------	*	------	8.50	33500	8.60	34250	7.95	29445	5.20	13625	3.10	4255	2.90	3630	3.05	4090	3.90	7575	2.90	3630	7.90	29095
15,	*	------	*	------	7.60	27035	8.15	30800	7.85	28745	5.00	12700	3.00	3930	2.80	3330	3.00	3930	3.85	7340	3.00	3930	14.65	92495
16,	*	------	*	------	7.30	25040	7.80	28400	7.05	23420	4.95	12470	2.90	3630	2.80	3330	3.10	4255	3.90	7575	3.45	5535	22.57	222420
17,	*	------	*	------	7.40	25700	7.45	26030	6.30	19015	4.60	10840	2.90	3630	2.80	3330	3.10	4255	3.90	7575	3.90	7575	20.05	169960
18,	*	------	*	------	6.90	22470	7.10	23740	5.80	16530	4.60	10840	3.00	3930	6.60	20660	3.40	5335	3.90	7575	3.90	7575	13.85	83910
19,	*	------	*	------	6.60	20660	6.75	21545	5.80	16530	4.45	10140	3.10	4255	7.85	28745	3.50	5740	3.80	7110	3.60	6195	10.25	47940
20,	*	------	*	------	6.60	20660	6.50	20095	5.70	16040	4.10	8505	3.00	3930	5.60	15550	3.50	5740	3.90	7575	3.50	5740	8.30	32000
21,	*	------	*	------	9.25	39305	6.90	22470	5.95	17255	4.00	8040	2.90	3630	4.55	10605	3.60	6195	3.60	6195	3.50	5740	7.10	23740
22,	*	------	*	------	11.85	62090	12.60	70700	5.75	16285	3.90	7575	2.80	3330	4.75	11535	3.60	6195	3.50	5740	3.50	5740	5.90	17010
23,	*	------	*	------	12.70	71740	15.25	99500	5.35	14340	3.90	7575	2.70	3040	6.30	19015	3.40	5335	3.40	5335	3.40	5335	5.10	13160
24,	*	------	*	------	11.35	58100	12.75	72265	5.40	14580	4.25	9205	2.60	2775	8.10	30525	3.40	5335	3.30	4960	3.40	5335	4.90	12235
25,	*	------	*	------	11.25	57145	12.05	65010	6.55	20375	5.35	14340	2.60	2775	11.02	54985	3.10	4255	3.30	4960	3.70	6650	4.75	11535
26,	*	------	*	------	11.15	56200	11.70	61500	7.40	25700	4.70	11305	2.60	2775	9.25	39305	3.00	3930	3.20	4600	6.17	18345	4.95	12470
27,	*	------	*	------	13.35	78610	10.65	51575	6.90	22470	4.45	10140	2.60	2775	7.55	26700	2.90	3630	3.10	4255	7.00	23100	5.10	13160
28,	*	------	*	------	17.00	121900	8.90	36520	6.40	19550	4.10	8505	2.60	2775	6.15	18240	2.80	3330	3.10	4255	5.85	16770	5.00	12700
29,	*	------	*	------	16.85	119885	8.25	31630	8.00	29800	3.85	7310	2.50	2520	5.35	14310	2.90	3630	3.00	3930	4.95	12470	5.20	13625
30,	*	------	*	------	13.35	78610	7.35	25370	12.70	71740	3.80	7110	2.70	3040	4.70	11305	3.20	4600	3.00	3930	4.35	9675	7.15	24060
31,	*	------	*	------	10.45	49755	------	------	14.95	95915	------	------	2.90	3630	4.40	9910	------	------	2.90	3630	------	------	6.80	21850

*Ice.
a Estimated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT DANVILLE, MONTOUR COUNTY, PENNA.

1902.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.60	20660	4.85	12000	20.67	181865	7.85	28745	4.40	9910	3.50	5740	6.10	17990	7.70	27715	3.10	4255	8.95	36910	7.05	23420	4.30	9440
2,	6.20	18495	5.05	12930	24.43	266820	7.60	27035	4.30	9440	3.40	5335	8.95	36910	7.75	28055	3.00	3930	9.15	38495	6.30	19015	4.20	8970
3,	5.40	14580	*	------	26.07	306180	7.40	25700	4.20	8970	3.30	4960	7.40	25700	8.70	35000	3.00	3930	9.05	37695	5.80	16530	4.20	8970
4,	5.50	15060	*	------	22.25	215130	7.10	23740	4.20	8970	3.30	4960	6.90	22470	8.20	31260	2.90	3630	7.65	27375	5.45	14820	4.00	10840
5,	6.70	21245	*	------	18.20	139180	6.65	20950	4.20	8970	3.30	4960	6.90	22470	7.20	24385	2.90	3630	6.75	21545	5.20	13625	4.70	11305
6,	*	------	*	------	14.50	90840	6.45	19820	4.10	8505	3.20	4600	6.90	22470	6.75	21545	2.80	3330	6.80	21850	5.00	12700	4.90	12235
7,	*	------	*	------	10.75	52490	6.30	19015	4.00	8040	3.20	4600	8.50	33500	5.85	16770	2.80	3330	6.50	20095	4.85	12000	4.90	12235
8,	*	------	*	------	8.55	33875	6.50	20095	4.00	8040	3.90	7575	11.90	63490	5.45	14820	2.80	3330	6.10	17990	4.70	11305	4.80	11770
9	10.60	51120	*	------	8.35	32375	7.30	25040	3.90	7575	3.70	6650	10.45	49755	5.20	13625	2.70	3040	5.60	15550	4.70	11305	4.70	11305
10,	9.45	40975	*	------	9.10	38090	11.90	63490	3.80	7110	3.50	5740	7.85	28745	5.00	12700	2.90	3630	5.20	13625	4.50	10375	4.30	9440
11,	9.10	38090	*	------	10.25	47940	13.10	75960	3.80	7110	3.50	5740	7.25	24710	4.70	11305	3.00	3930	4.90	12235	4.30	9440	4.20	8970
12,	9.30	39715	*	------	11.55	60035	11.20	56670	3.70	6650	3.60	6195	7.80	28400	4.60	10840	3.10	4255	5.40	14580	4.20	8970	4.30	9440
13,	*	------	*	------	14.15	87090	9.75	43525	3.60	6195	3.50	5740	7.90	29095	4.50	10375	3.00	3930	6.00	17500	4.10	8505	4.40	9910
14,	*	------	*	------	16.15	110790	8.65	34625	3.50	5740	3.50	5740	7.20	24385	4.50	10375	3.10	4255	5.60	15550	4.00	8040	5.00	12700
15,	*	------	*	------	15.55	103230	7.70	27715	3.50	5740	3.60	6195	5.55	15305	4.40	9910	3.10	4255	5.25	13860	3.90	7575	6.50	20095
16,	*	------	*	------	13.95	84970	7.05	23420	3.40	5335	3.60	6195	5.15	13390	4.30	9440	3.00	3930	5.10	13160	3.90	7575	7.80	28400
17,	*	------	*	------	14.25	88155	6.60	20660	3.30	4960	3.70	6650	4.85	12000	4.10	8505	2.90	3630	5.10	13160	3.90	7575	9.40	40550
18,	*	------	*	------	16.60	116570	6.35	19280	3.30	4960	4.10	8505	4.60	10840	3.80	7110	2.80	3330	5.00	12700	3.80	7110	10.30	48390
19,	*	------	*	------	15.60	103860	6.15	18240	3.20	4600	4.00	8040	4.40	9910	3.70	6650	2.70	3040	4.70	11305	3.70	6650	10.60	51120
20,	*	------	*	------	12.80	72790	5.90	17010	3.10	4255	3.80	7110	4.40	9910	3.60	6195	2.60	2775	4.50	10375	3.60	6195	9.40	40550
21,	*	------	*	------	10.95	54335	5.45	14820	3.10	4255	3.80	7110	5.30	14100	3.50	5740	2.60	2775	4.20	8970	3.60	6195	8.80	35750
22,	*	------	*	------	8.90	36520	5.30	14100	3.10	4255	3.70	6650	11.90	63490	3.50	5740	2.60	2775	4.10	8505	3.60	6195	12.70	71740
23,	8.10	30525	*	------	8.00	29800	5.10	13160	3.00	3930	3.60	6195	12.00	64500	3.40	5335	2.60	2775	4.20	8970	3.50	5740	14.80	94180
24,	9.45	40975	*	------	6.40	19550	4.90	12235	3.00	3930	3.50	5740	11.30	57620	3.40	5335	2.50	2520	4.30	9440	3.50	5740	14.40	89760
25,	8.50	33500	*	------	7.20	24385	4.70	11305	3.20	4600	3.50	5740	10.90	53870	3.40	5335	2.60	2775	4.20	8970	3.50	5740	11.80	62490
26,	7.40	25700	*	------	7.10	23740	4.50	10375	3.30	4960	3.60	6195	11.90	63490	3.30	4960	4.75	11535	4.00	8040	3.60	6195	9.75	43525
27,	6.90	22470	*	------	7.05	23420	4.30	9440	3.20	4600	3.70	6650	10.20	47490	3.20	4600	6.85	22160	5.60	15550	3.80	7110	8.40	32750
28,	6.75	21545	13.75	82850	6.65	20950	4.10	8505	3.30	4960	3.70	6650	8.30	32000	3.20	4600	6.20	18495	8.90	36520	3.90	7575	7.60	27035
29,	6.40	19550	------	------	6.75	21545	4.00	8040	3.50	5740	3.50	5740	8.00	29800	3.20	4600	6.05	17745	9.70	43100	4.00	8040	6.80	21850
30,	6.20	18495	------	------	8.15	30890	4.30	9440	3.80	7110	4.20	8970	9.30	39715	3.10	4255	7.95	29445	9.35	40130	4.20	8970	6.30	19015
31,	5.55	15305	------	------	8.30	32000	------	------	3.70	6650	------	------	8.20	31260	3.10	4255	------	------	8.20	31260	------	------	5.70	16040

*Frozen.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT DANVILLE, MONTOUR COUNTY, PENNA.

1903. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.20	13625	†13.80	83380	16.40	113970	8.50	33500	4.10	8505	2.70	3040	6.50	20095	4.10	8505	11.60	60520	3.00	3930	4.80	11770	4.00	8040
2,	5.20	13625	†12.40	68620	17.60	130330	9.80	43950	4.00	8040	2.60	2775	6.00	17500	3.90	7575	9.85	44385	2.90	3630	4.60	10840	4.60	10840
3,	6.10	17990	†10.20	47490	14.40	89760	8.90	36520	3.80	7110	2.60	2775	5.55	15305	3.90	7575	8.00	29800	2.90	3630	4.50	10375	5.10	13160
4,	6.60	20660	†11.20	56670	11.60	60520	7.80	28400	3.70	6650	2.60	2775	5.30	14100	3.70	6650	6.90	22470	2.90	3630	4.40	9910	4.60	10840
5,	7.30	25040	†14.00	85500	9.60	42250	7.60	27035	3.70	6650	2.50	2520	5.00	12700	4.15	8735	6.05	17745	2.90	3630	4.30	9440	4.00	8040
6,	8.20	31260	†15.20	98890	8.70	35000	8.30	32000	3.60	6195	2.50	2520	4.70	11305	4.85	12000	5.60	15550	3.00	3930	4.10	8505	3.90	7575
7,	7.40	25700	†11.80	62490	9.20	38900	7.60	27035	3.50	5740	2.50	2520	4.70	11305	6.70	21245	5.10	13160	3.00	3930	4.10	8505	4.40	9910
8,	6.60	20660	†9.70	43100	9.60	42250	7.20	24385	3.50	5740	2.80	3330	6.50	20095	6.45	19820	4.90	12235	3.40	5335	4.20	8970	4.50	10375
9,	6.00	17500	†7.80	28400	10.40	49300	8.80	35750	3.40	5335	2.90	3630	5.30	14100	6.00	17500	4.50	10375	4.70	11305	4.30	9440	4.00	8040
10,	5.70	16040	†7.00	23100	15.00	96500	9.30	39715	3.30	4960	2.80	3330	4.60	10840	5.60	15550	4.30	9440	12.50	69660	4.30	9440	4.40	9910
11,	†9.40	40550	†7.20	24385	14.50	90840	8.80	35750	3.30	4960	2.70	3040	4.00	8040	5.00	12700	4.20	8970	16.60	116570	4.10	8505	5.10	13160
12,	*	------	†7.10	23740	15.00	96500	7.90	29095	3.20	4600	3.40	5335	4.00	8040	4.90	12235	4.30	9440	17.00	121900	4.00	8040	*	------
13,	*	------	†7.40	25700	14.80	94180	7.70	27715	3.10	4255	3.10	4255	3.90	7575	4.60	10840	4.30	9440	15.40	101350	3.80	7110	*	------
14,	*	------	†8.50	33500	12.80	72790	7.30	25040	3.10	4255	5.00	12700	3.60	6195	4.70	11305	4.70	11305	11.60	60520	3.80	7110	*	------
15,	*	------	†8.80	35750	11.40	58580	8.10	30525	3.10	4255	5.90	17010	3.50	5740	4.30	9140	4.30	9440	8.95	36910	3.70	6650	*	------
16,	*	------	†8.10	30525	9.60	42250	11.35	58100	3.10	4255	5.65	15795	3.40	5335	4.30	9440	4.00	8040	7.60	27035	3.90	7575	*	------
17,	*	------	†7.00	23100	8.70	35000	11.05	55265	3.00	3930	5.00	12700	3.30	4960	4.10	8505	3.80	7110	6.80	21850	3.90	7575	*	------
18,	*	------	†6.60	20660	7.60	27035	9.05	37695	3.00	3930	4.60	10840	3.20	4600	3.90	7575	4.30	9440	7.50	26365	7.75	28055	*	------
19,	*	------	†5.70	16040	7.60	27035	7.30	25040	3.00	3930	4.25	9205	3.90	7575	3.70	6650	4.30	9440	9.00	37300	10.10	46590	*	------
20,	*	------	†6.00	17500	7.40	25700	7.10	23740	2.90	3630	4.15	8735	4.50	10375	3.50	5740	3.90	7575	10.20	47490	7.80	28400	*	------
21,	*	------	*	------	7.00	23100	6.40	19550	2.90	3630	4.00	8040	4.40	9910	3.50	5740	4.10	8505	9.40	40550	7.50	26365	*	------
22,	*	------	*	------	6.80	21850	5.90	17010	2.90	3630	4.30	9440	4.50	10375	3.85	7340	3.90	7575	8.20	31260	6.80	21850	*	------
23,	*	------	*	------	8.00	29800	5.50	15060	3.00	3930	6.40	19550	4.40	9910	4.50	10375	3.80	7110	7.20	24385	5.80	16530	*	------
24,	*	------	*	------	15.85	107010	5.30	14100	3.00	3930	6.95	22785	4.10	8505	4.20	8970	3.70	6650	6.50	20095	5.50	15060	*	------
25,	*	------	*	------	18.05	136945	5.00	12700	2.90	3630	7.75	28055	3.80	7110	3.90	7575	3.40	5335	6.00	17500	5.20	13625	*	------
26,	*	------	*	------	15,25	99500	4.80	11770	2.90	3630	7.80	28400	5.30	14100	3.70	6650	3.30	4960	5.60	15550	5.00	12700	″	------
27,	*	------	*	------	12.80	72790	4.70	11305	2.80	3330	8.55	33875	4.90	12235	3.50	5740	3.20	4600	5.40	14580	4.80	11770	*	------
28,	*	------	10.85	53410	10.70	52030	4.50	10375	2.70	3040	6.90	22470	4.10	8505	3.70	6650	3.20	4600	5.20	13625	4.70	11305	*	------
29,	*	------	------	------	9.30	39715	4.40	9910	2.80	3330	6.80	21850	3.80	7110	5.15	13390	3.20	4600	5.00	12700	4.30	9440	*	------
30,	*	------	------	------	8.30	32000	4.20	8970	2.80	3330	7.30	25040	3.80	7110	10.73	52206	3.00	3930	4.80	11770	4.20	8970	*	------
31,	†14.80	94180	------	------	7.80	28400	------	------	2.70	3040	------	------	3.80	7110	14.65	92195	------	------	4.80	11770	------	------	″	------

*Frozen.
†Water backed up by ice.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT DANVILLE, MONTOUR COUNTY, PENNA.

1905.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	*		*		*		11.95	63995	4.5	10375	3.2	4600	4.2	8970	3.0	3930	2.9	3630	3.5	5740	3.7	6650	5.8	16530
2,	*		*		*		11.1	55730	4.4	9910	3.1	4255	4.1	8505	3.3	4960	2.8	3330	3.4	5335	3.6	6195	7.1	23740
3,	*		*		*		9.6	42250	4.3	9440	3.0	3930	4.0	8040	3.7	6650	4.35	9675	3.4	5335	3.5	5740	8.25	31630
4,	*		*		*		8.4	32750	4.2	8970	2.9	3630	3.9	7575	3.9	7575	5.5	15060	3.3	4960	3.7	6650	10.75	52490
5,	*		*				7.45	26030	4.1	8505	2.9	3630	5.6	15550	4.0	8040	5.7	16040	3.3	4960	3.8	7110	13.15	76490
6,	*		*				7.5	26305	4.0	8040	2.9	3630	5.0	12700	4.0	8040	6.4	19550	3.3	4960	3.7	6650	11.20	56670
7,	*						9.2	38900	4.0	8040	3.0	3930	4.8	11770	3.8	7110	9.2	38900	3.8	7110	3.9	7575	9.2	38900
8,	*						9.35	40130	4.1	8505	3.1	4255	3.9	7575	3.4	5335	8.9	36520	3.7	6650	4.0	8040	7.75	28055
9,							8.9	36520	4.1	8505	4.0	10840	3.7	6650	3.3	4960	7.0	23100	3.5	5740	4.2	8970	6.9	22470
10,							8.05	30160	4.0	8040	4.5	10375	3.5	5740	3.2	4600	5.8	16530	3.3	4960	4.4	9910	6.7	21245
11,							7.45	26030	4.0	8040	4.3	9440	3.5	5740	3.0	3930	5.1	13160	3.3	4960	4.4	9910	6.3	19015
12,							7.3	25040	3.9	7575	4.1	8505	3.4	5335	3.1	4255	5.7	16040	4.7	11305	4.2	8970	6.0	17500
13,							7.4	25700	3.8	7110	4.0	8040	3.6	6195	3.5	5740	5.9	17010	5.75	16285	4.2	8970	5.6	15550
14,							7.75	28055	3.8	7110	3.8	7110	3.5	5740	4.7	11305	6.4	19550	6.85	22160	4.1	8505	5.3	14100
15,							7.25	24710	3.7	6650	4.0	8040	3.3	4960	4.2	8970	6.5	20095	6.6	20660	3.9	7575	5.0	12700
16,							6.7	21245	3.7	6650	3.9	7575	3.3	4960	5.2	13625	5.9	17010	5.8	16530	3.8	7110	7.7	27715
17,							6.5	20095	3.6	6195	3.7	6650	3.3	4960	5.0	12700	5.2	13625	5.0	12700	3.7	6650	4.8	11770
18,							6.5	20095	3.7	6650	3.5	5740	3.2	4600	4.5	10375	4.9	12235	4.6	10840	3.7	6650	3.9	7575
19,							5.95	17255	3.8	7110	3.4	5335	3.2	4600	4.4	9910	4.7	11305	4.3	9440	3.5	5740	3.9	7575
20,							5.65	15795	3.9	7575	3.3	4960	3.1	4255	4.8	11770	5.2	13625	4.2	8970	3.5	5749	3.8	7110
21,							5.55	15305	3.8	7110	5.9	17010	3.0	3930	4.5	10375	6.2	18495	5.0	12700	3.4	5335	4.0	8040
22,							5.6	15550	3.7	6650	5.6	15550	3.0	3930	4.0	8040	5.7	16040	5.5	15060	3.4	5335	4.7	11305
23,					14.5	90840	5.85	16770	3.6	6195	7.8	28400	3.0	3930	3.7	6650	5.9	17010	5.5	15060	3.4	5335	5.4	14580
24,					13.72	82530	6.5	20095	3.6	6195	9.8	43950	2.9	3630	3.5	5740	5.2	13625	5.2	13625	3.3	4960	6.8	21850
25,					†16.10	110160	6.3	19015	3.5	5740	8.8	35750	2.8	3330	3.6	6195	4.8	11770	4.7	11305	3.2	4600	7.6	27035
26,					18.62	145460	6.1	17990	3.4	5335	7.3	25040	2.8	3330	3.4	5335	4.4	9910	4.5	10375	3.2	4600	6.7	21245
27,					18.02	130500	5.9	17010	3.4	5335	6.0	17500	3.9	7575	3.3	4960	4.1	8505	4.3	9440	3.2	4600	6.5	20095
28,					17.05	122585	5.2	13625	3.3	4960	5.7	16040	3.6	6195	3.1	4255	3.9	7575	4.2	8970	3.7	6650	6.0	17500
29,					15.95	108270	4.8	11770	3.3	4960	4.6	10840	3.5	5740	3.0	3930	3.8	7110	4.1	8505	4.3	9440	5.4	14580
30,					14.45	90309	4.6	10840	3.4	5335	4.4	9910	3.4	5335	2.9	3630	3.6	6195	3.9	7575	4.7	11305	5.2	13625
31,					12.95	74370			3.4	5335			3.3	4960	2.9	3630			3.8	7110			5.1	13160

*Frozen.
†Interpolated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT DANVILLE, MONTOUR COUNTY, PENNA.

1906. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.7	21245	5.0	12700	6.1	17990	14.2	87620	5.0	12700	7.4	25700	5.1	13160	3.1	4255	3.9	7575	2.5	2520	4.6	10840	4.3	9440
2,	6.1	17990	4.9	12235	5.4	14580	12.5	69660	4.8	11770	6.6	20660	4.8	11770	3.0	3930	3.5	5740	2.5	2520	4.6	10840	4.3	9440
3,	5.5	15060	4.5	10375	5.5	15060	10.6	51120	4.6	10840	6.4	19550	4.6	10840	3.0	3930	3.7	6650	2.6	2775	4.6	10840	4.1	8505
4,	5.0	12700	4.2	8970	9.25	39305	9.25	39305	4.9	12235	6.3	19015	5.3	14100	3.0	3930	3.3	4960	2.5	2520	4.6	10840	4.3	9440
5,	5.2	13625	*	......	10.7	52030	8.8	35750	4.6	10840	5.5	15060	6.3	19015	3.3	4960	3.1	4255	2.9	3630	4.4	9910	4.0	8040
6,	5.3	14100	*	......	9.75	43525	10.3	48390	4.6	10840	4.7	11305	5.5	15060	3.4	5335	3.0	3930	3.1	4255	4.3	9440	4.6	10840
7,	5.8	16530	*	......	8.8	35750	11.4	58580	5.8	16530	5.2	13625	5.0	12700	3.2	4600	2.9	3630	3.1	4255	4.1	8505	5.7	16040
8,	5.4	14580	*	......	7.8	28400	11.0	54800	5.6	15550	6.3	19015	4.5	10375	3.6	6195	2.8	3330	3.0	3930	3.9	7575	6.5	20095
9,	5.0	12700	*	......	6.8	21850	9.3	39715	5.0	12700	6.0	17500	4.2	8970	3.7	6650	2.8	3330	2.9	3630	3.8	7110	7.1	23740
10,	4.5	10375	*	......	6.2	18495	9.2	38900	5.0	12700	5.5	15060	4.0	8040	3.9	7575	2.8	3330	2.8	3330	3.7	6650	7.6	27035
11,	4.4	9910	*	......	6.0	17500	11.8	62490	4.8	11770	5.1	13160	4.0	8040	4.1	8505	2.7	3040	2.9	3630	3.7	6650	6.0	17500
12,	4.3	9440	*	......	5.3	14100	12.7	71740	4.6	10840	5.4	14580	3.8	7110	3.7	6650	2.7	3040	3.0	3930	3.6	6195	5.3	14100
13,	4.0	8040	*	......	5.3	14100	11.8	62490	4.6	10840	5.1	13160	3.9	7575	3.4	5335	2.6	2775	3.0	3930	3.5	5740	5.3	14100
14,	4.2	8970	*	......	5.0	12700	10.5	50210	4.5	10375	5.2	13625	4.1	8505	3.7	6650	2.5	2520	2.9	3630	3.5	5740	5.2	13625
15,	4.3	9440	*	......	4.1	8505	12.3	67580	4.3	9440	4.8	11770	3.9	7575	3.5	5740	2.5	2520	2.9	3630	3.8	7110	5.1	13160
16,	4.5	10375	*	......	4.5	10375	13.2	77020	4.3	9440	4.4	9910	......	......	3.2	4600	2.1	1590	2.9	3630	3.9	7575	5.1	13160
17	4.5	10375	*	......	4.5	10375	12.7	71740	4.4	9910	4.3	9440	......	......	3.0	3930	2.4	2270	2.9	3630	4.0	8040	5.7	16040
18,	4.5	10375	*	......	4.3	9440	11.5	59550	4.3	9440	5.4	14580	......	......	2.9	3630	2.4	2270	2.9	3630	4.0	8040	7.6	27035
19,	4.3	9440	*	......	4.3	9440	9.75	43525	4.5	10375	8.75	35375	......	......	2.8	3330	2.3	2030	2.8	3330	4.1	8505	6.8	21850
20,	4.2	8970	*	......	4.0	8040	8.7	35000	4.8	11770	9.4	40550	......	......	2.7	3040	2.3	2030	2.8	3330	5.4	14580	5.6	15550
21,	4.4	9910	*	......	3.8	7110	7.45	26030	4.7	11305	8.8	35750	......	......	2.6	2775	2.3	2030	3.3	4960	7.5	26365	5.5	15060
22,	5.1	13160	7.9	29095	3.9	7575	7.1	23740	4.6	10840	8.6	34250	......	......	2.7	3040	2.4	2270	6.6	20660	7.5	26365	5.2	13625
23,	7.3	25040	†12.0	64500	3.8	7110	7.0	23100	4.2	8970	6.9	22470	......	......	2.7	3040	2.4	2270	6.5	20095	7.3	25040	5.0	12700
24,	9.3	39715	7.5	26365	3.7	6650	6.8	21850	3.9	7575	6.0	17500	......	......	3.3	4960	2.4	2270	5.9	17010	7.0	23100	4.7	11305
25,	11.6	60520	7.4	25700	3.8	7110	6.9	22470	3.8	7110	5.4	14580	......	......	3.3	4960	2.3	2030	5.2	13625	6.5	20095	4.3	9440
26,	11.0	54800	7.8	28400	3.8	7110	6.6	20660	3.6	6195	4.9	12235	......	......	3.5	5740	2.3	2030	4.8	11770	5.7	16040	4.1	8505
27,	9.1	38090	7.5	26365	3.7	6650	6.3	19015	3.7	6650	4.5	10375	......	......	3.6	6195	2.4	2270	4.6	10840	5.4	14580	3.7	6650
28,	7.5	26365	6.6	20660	6.65	20950	5.9	17010	4.1	8505	4.4	9910	......	......	3.8	7110	2.5	2520	4.5	10375	5.1	13160	3.6	6195
29,	6.7	21245	......	......	13.5	80200	5.5	15060	10.1	46590	4.1	8505	......	......	3.6	6195	2.5	2520	4.3	9440	4.7	11305	3.4	5335
30,	5.9	17010	......	......	12.8	72790	5.1	13160	10.1	46590	4.1	8505	......	......	3.5	5740	2.5	2520	4.4	9910	4.5	10375	3.7	6650
31,	5.6	15550	......	......	12.5	69660	......	......	8.7	35000	......	......	......	......	3.8	7110	......	......	4.5	10375	......	......	4.8	11770

*Frozen.
†Backwater.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT DANVILLE, MONTOUR COUNTY, PENNA.

1907. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	10.6	51120	4.6	10840	*	------	8.7	35000	8.0	29800	4.1	8505	3.8	7110	3.1	4255	2.0	1390	3.6	6195	6.8	21850	4.8	11770
2,	12.5	69660	4.5	10375	*	------	7.5	26365	7.2	24385	4.3	9440	3.6	6195	2.9	3630	1.9	1200	3.4	5335	6.0	17500	4.8	11770
3,	11.45	59065	4.3	9440	*	------	6.7	21245	7.8	28400	4.5	10375	3.9	7575	2.9	3630	2.0	1390	3.5	5740	7.2	24385	4.6	10840
4,	10.2	47490	4.1	8505	*	------	6.0	17500	7.4	25700	4.4	9910	4.4	9910	2.8	3330	2.0	1390	3.6	6195	8.4	32750	4.6	10840
5,	9.3	39715	4.0	8040	*	------	5.6	15550	6.8	21850	4.5	10375	4.0	8040	2.7	3040	2.2	1800	4.0	8040	7.6	27035	4.3	9440
6,	11.55	60035	3.9	7575	*	------	5.4	14580	6.1	17990	4.6	10840	3.9	7575	2.6	2775	2.3	2030	4.4	9910	7.1	23740	4.3	9440
7,	10.6	51120	3.7	6650	*	------	5.3	14100	6.0	17500	4.4	9910	4.2	8970	2.5	2520	2.4	2270	5.3	14100	8.9	36520	4.2	8070
8,	9.4	40550	3.7	6650	*	------	5.2	13625	5.9	17010	4.3	9440	3.6	6195	2.5	2520	2.6	2775	5.7	16040	9.8	43950	4.2	8970
9,	10.6	51120	3.5	5740	*	------	4.9	12235	5.8	16530	4.3	9440	3.9	7575	2.4	2270	2.7	3040	6.0	17500	11.6	60520	3.9	7575
10,	10.0	45700	3.5	5740	3.8	7110	4.9	12235	6.8	21850	4.3	9440	3.7	6650	2.6	2775	3.5	5740	6.5	20095	10.9	53870	4.9	12235
11,	9.6	42250	3.5	5740	3.9	7575	4.9	12235	6.9	22470	4.2	8970	3.5	5740	2.4	2270	4.2	8970	7.6	27035	9.0	37300	14.8	94180
12,	8.5	33500	3.4	5335	4.2	8970	5.1	13160	6.1	17990	4.1	8505	3.5	5740	2.5	2520	4.8	11770	6.9	22470	8.2	31260	15.3	100110
13	7.8	28400	3.4	5335	4.4	9910	5.3	14100	5.9	17010	3.8	7110	3.4	5335	2.3	2030	5.8	16530	6.1	17990	7.0	23100	12.4	68620
14,	7.0	23100	3.2	4600	5.6	15550	5.3	14100	5.6	15550	3.7	6650	3.6	6195	2.4	2270	6.4	19550	5.8	16530	6.7	21245	11.6	60520
15,	6.6	20660	3.3	4960	6.2	18495	5.6	15550	5.3	14100	3.7	6650	4.3	9440	2.4	2270	5.7	16040	5.7	16040	6.0	17500	10.2	47490
16,	7.7	27715	3.2	4600	8.55	33875	5.6	15550	5.3	14100	3.6	6195	4.2	8970	2.3	2030	4.9	12235	5.4	14580	5.6	15550	7.8	28400
17,	7.0	23100	3.2	4600	10.2	47490	5.5	15060	5.1	13160	3.3	4960	3.9	7575	2.2	1800	4.1	8505	4.9	12235	5.3	14100	7.4	25700
18,	6.6	20660	3.2	4600	11.7	61500	5.3	14100	4.9	12235	3.3	4960	3.7	6650	2.3	2030	3.8	7110	4.6	10840	5.0	12700	6.9	22470
19,	6.0	17500	3.1	4255	11.25	57145	5.0	12700	4.9	12235	3.2	4600	3.6	6195	2.1	1590	3.5	5740	4.3	9440	4.8	11770	6.5	20095
20,	5.7	16040	3.3	4960	10.6	51120	5.0	12700	4.7	11305	3.1	4255	3.3	4960	2.2	1800	3.6	6195	4.1	8505	4.7	11305	6.2	18495
21	8.5	33500	3.3	4960	10.1	46590	4.9	12235	4.5	10375	3.2	4600	3.4	5335	2.1	1590	3.8	7110	3.9	7575	4.6	10840	5.9	17010
22,	10.5	50210	3.5	5740	9.1	38090	4.8	11770	4.6	10840	3.2	4600	3.3	4960	2.1	1590	3.6	6195	3.8	7110	4.6	10840	5.4	14580
23,	9.05	37695	*	------	8.6	34250	4.8	11770	4.6	10840	3.0	3930	3.2	4600	2.0	1390	3.7	6650	3.8	7110	4.6	10840	5.7	16040
24,	6.9	22470	*	------	11.2	56670	4.6	10840	4.2	8970	3.1	4255	3.3	4960	2.2	1800	3.7	6650	3.9	7575	4.5	10375	8.6	34250
25,	6.0	17500	*	------	12.3	67580	4.6	10840	4.1	8505	3.1	4255	3.1	4255	2.3	2030	4.0	8040	3.9	7575	4.4	9910	14.3	88690
26,	5.7	16040	*	------	11.5	59550	8.4	32750	4.0	8040	3.0	3930	3.0	3930	2.3	2030	4.0	8040	3.7	6650	4.4	9910	14.0	85500
27,	5.0	12700	*	------	10.1	46590	8.1	30525	3.8	7110	3.1	4255	3.0	3930	2.1	1590	3.6	6195	3.7	6650	4.3	9440	11.6	60520
28,	4.4	9910	*	------	9.0	37300	11.1	55730	3.8	7110	3.1	4255	3.0	3930	2.2	1800	3.6	6195	4.1	8505	4.5	10375	9.2	38900
29	4.5	10375	------	------	8.5	33500	10.15	47040	3.9	7575	2.9	3630	2.9	3630	2.0	1390	3.5	5740	4.6	10840	4.6	10840	9.1	38090
30,	4.4	9910	------	------	8.9	36520	9.3	39715	4.4	9910	3.2	4600	3.3	4960	2.1	1590	3.6	6195	5.8	16530	4.6	10840	10.6	51120
31,	4.5	10375	------	------	9.2	38900	------	------	4.4	9910	------	------	3.2	4600	2.0	1390	------	------	7.6	27035	------	------	10.3	48390

*Frozen.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT DANVILLE, MONTOUR COUNTY, PENNA.

1908. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	9.6	42250	4.2	8970	6.3	19015	12.7	71740	6.4	19550	4.7	11305	2.6	2775	2.7	3040	1.95	1295	2.05	1490	2.5	2520	2.2	1800
2,	8.9	36520	*	----	5.6	15550	10.7	52030	6.7	21245	5.1	13160	2.5	2520	2.6	2775	1.95	1295	1.95	1295	2.4	2270	2.1	1590
3,	7.7	27715	*	----	5.4	14580	9.5	41400	9.2	38900	5.0	12700	3.3	4960	2.4	2270	1.85	1120	1.85	1120	2.4	2270	2.2	1800
4,	7.0	23100	*	----	5.1	13160	9.1	38090	9.6	42250	4.8	11770	3.1	4255	2.5	2520	1.85	1120	1.95	1295	2.3	2030	2.1	1590
5,	6.8	21850	*	----	6.1	17990	8.0	29800	8.6	34250	4.4	9910	2.9	3630	2.3	2030	1.85	1120	1.85	1120	2.3	2030	2.1	1590
6,	5.8	16530	*	----	6.2	18495	7.2	24385	7.7	27715	4.1	8505	2.9	3630	2.4	2270	1.85	1120	1.85	1120	2.2	1800	2.0	1390
7,	5.7	16040	*	----	6.1	17990	7.0	23100	8.1	30525	4.0	8040	2.9	3630	2.3	2030	1.85	1120	1.85	1120	2.3	2030	2.1	1590
8,	5.4	14580	*	----	6.0	17500	7.0	23100	11.6	60520	3.6	6195	2.7	3040	2.4	2270	1.75	980	1.85	1120	2.2	1800	2.0	1390
9,	4.9	12235	*	----	6.0	17500	6.8	21850	12.5	69660	3.5	5740	2.7	3040	2.3	2030	1.75	980	1.85	1120	2.3	2030	2.2	1800
10,	4.5	10375	*	----	5.8	16530	7.1	23740	12.9	73840	3.4	5335	2.9	3630	2.3	2030	1.75	980	1.85	1120	2.1	1590	2.1	1590
11,	4.2	8970	*	----	5.7	16040	7.9	29095	12.1	65520	3.2	4600	2.6	2775	2.2	1800	1.75	980	1.85	1120	2.2	1800	2.3	2030
12,	5.3	14100	*	----	6.6	20660	7.6	27035	11.1	55730	3.2	4600	2.6	2775	2.3	2030	1.75	980	1.95	1295	2.1	1590	2.3	2030
13,	6.4	19550	*	----	7.4	25700	6.9	22470	9.6	42250	3.1	4255	2.6	2775	2.2	1800	1.75	980	1.85	1120	2.2	1800	2.4	2270
14	6.8	21850	*	----	12.3	67580	6.7	21245	8.8	35750	3.0	3930	2.4	2270	2.3	2030	1.75	980	1.85	1120	2.1	1590	2.3	2030
15,	7.5	26365	10.5	50210	16.1	110160	6.4	19550	8.1	30525	3.1	4255	2.5	2520	2.2	1800	1.75	980	1.95	1295	2.3	2030	2.4	2270
16,	6.4	19550	15.9	107640	16.8	119220	6.2	18495	8.5	33500	3.2	4600	2.3	2030	2.2	1800	1.75	980	1.85	1120	2.2	1800	2.2	1800
17,	6.0	17500	17.0	121900	15.5	102600	6.2	18495	8.6	34250	3.0	3930	2.6	2775	2.1	1590	1.75	980	1.85	1120	2.2	1800	2.3	2030
18,	5.7	16040	14.4	89760	14.6	91940	7.8	28400	8.0	29800	3.0	3930	2.4	2270	2.2	1800	1.75	980	1.85	1120	2.2	1800	2.4	2270
19,	5.3	14100	11.7	61500	13.5	80200	7.7	27715	7.5	26365	3.0	3930	2.5	2520	2.2	1800	1.65	870	1.85	1120	2.4	2270	2.8	3330
20,	5.0	12700	10.0	45700	14.1	86560	7.6	27035	6.9	22470	2.8	3330	2.4	2270	2.2	1800	1.65	870	1.85	1120	2.3	2030	2.7	3040
21,	4.9	12235	7.6	27035	12.2	66550	7.7	27715	6.1	17990	2.9	3630	2.4	2270	2.1	1590	1.65	870	1.85	1120	2.3	2030	a2.9	2630
22,	4.7	11305	6.8	21850	10.6	51120	8.4	32750	5.9	17010	2.8	3330	2.7	3040	2.2	1800	1.65	870	1.85	1120	2.2	1800	2.9	3630
23,	4.6	10840	6.0	17500	9.8	43950	7.6	27035	5.7	16040	2.7	3040	2.6	2775	2.2	1800	1.65	870	1.75	980	2.3	2030	3.4	5335
24,	4.7	11305	5.7	16040	8.4	32750	6.9	22470	5.6	15550	2.8	3330	2.5	2520	2.3	2030	1.65	870	1.75	980	2.2	1800	3.6	6195
25,	4.6	10840	5.4	14580	9.6	42250	6.6	20660	5.5	15060	2.8	3330	2.9	3630	2.1	1590	1.65	870	1.85	1120	2.2	1800	3.3	4960
26,	4.4	9910	6.6	20660	11.8	62490	6.0	17500	5.1	13160	2.8	3330	3.1	4255	2.2	1800	1.65	870	2.0	1390	2.1	1590	3.2	4600
27,	4.1	8505	7.2	24385	11.3	57620	5.6	15550	4.9	12235	2.9	3630	3.6	6195	2.2	1800	1.65	870	2.1	1590	2.3	2030	3.2	4600
28,	4.2	8970	7.2	24385	11.3	57020	5.8	16530	4.9	12235	2.8	3330	4.2	8970	2.2	1800	1.65	870	2.3	2030	2.2	1800	3.0	3930
29	3.9	7575	6.5	20095	13.3	78080	5.8	16530	4.6	10840	2.7	3040	3.9	7575	2.0	1390	1.75	980	2.3	2030	2.2	1800	2.8	3330
30,	4.4	9910	----	----	15.3	100110	5.5	15060	4.6	10840	2.7	3040	3.1	4255	1.95	1295	2.05	1490	2.5	2520	2.1	1590	2.7	3040
31,	4.1	8505	----	----	15.2	98890	----	----	4.7	11305	----	----	3.0	3930	1.95	1295	----	----	2.4	2270	----	----	2.7	3040

*Frozen.
a Slush ice backed up.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT DANVILLE, MONTOUR COUNTY, PENNA.

1909. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.7	3040	5.1	13160	9.30	39715	8.2	31260	13.4	79140	3.8	7110	3.40	5335	2.41	2295	2.08	1550	1.86	1140	2.15	1695	2.19	1780
2,	2.9	3630	4.4	9910	8.1	30525	7.6	27035	17.7	131780	3.8	7110	3.20	4600	2.38	2220	2.06	1510	1.81	1060	2.15	1695	2.25	1915
3,	2.9	3630	3.9	7575	7.2	24385	7.5	26365	16.9	120550	3.7	6650	3.05	4090	2.31	2055	2.02	1430	1.86	1140	2.17	1735	2.22	1845
4,	3.0	3930	3.7	6650	6.7	21245	7.6	27035	13.75	82850	3.5	5740	2.93	3720	2.26	1940	1.98	1350	1.92	1240	2.15	1695	2.25	1915
5,	3.7	6650	4.1	8505	6.5	20095	7.8	28400	11.95	63995	3.5	5740	2.85	3482	2.23	1870	1.98	1350	1.92	1240	2.10	1590	2.23	1870
6,	4.9	12235	4.7	11305	6.2	18495	7.5	26365	10.75	52490	4.0	8040	2.78	3270	2.21	1825	1.92	1240	1.90	1200	2.07	1530	2.25	1915
7,	6.5	20095	7.6	27035	5.7	16040	7.4	25700	9.6	42250	4.9	12235	2.70	3040	2.19	1780	1.90	1200	1.88	1170	2.05	1490	2.29	2005
8,	8.8	35750	8.3	32000	5.5	15060	7.5	26365	8.8	35750	6.0	17500	2.61	2800	2.15	1695	1.88	1170	1.86	1140	2.07	1530	2.27	1960
9,	7.9	29095	8.3	32000	5.4	14580	7.6	27035	8.6	34250	5.4	14580	2.59	2750	2.13	1655	1.86	1140	1.84	1105	2.06	1510	2.45	2395
10,	6.1	17990	7.3	25040	5.7	16040	7.7	27715	7.9	29095	4.7	11305	2.61	2800	2.09	1570	1.88	1170	1.82	1075	2.05	1490	*†2.30	2030
11,	5.1	13160	7.3	25040	6.9	22470	7.3	25040	7.7	27715	4.4	9910	2.56	2675	2.05	1490	1.96	1315	1.82	1075	2.05	1490	*2.25	1915
12,	4.9	12235	6.9	22470	9.15	38495	6.8	21850	7.6	27035	4.3	9440	2.46	2420	2.03	1450	2.02	1430	2.13	1655	2.03	1450	*2.25	1915
13	4.8	11770	6.5	20095	9.2	38900	6.7	21245	7.7	27715	6.7	21245	2.43	2345	2.01	1410	2.00	1390	2.30	2030	2.05	1490	*2.70	3040
14,	4.1	8505	6.2	18495	8.4	32750	7.0	23100	7.6	27035	5.8	16530	2.43	2345	1.99	1370	1.98	1350	2.24	1890	2.06	1510	3.66	6480
15,	3.9	7575	6.9	22470	7.5	26365	10.05	46145	6.9	22470	5.3	14100	2.41	2295	1.99	1370	2.02	1430	2.23	1870	2.05	1490	3.66	6480
16,	3.5	5740	7.65	27375	6.9	22470	14.15	87090	6.5	20095	6.5	20095	2.41	2295	1.99	1370	2.02	1430	2.16	1715	2.05	1490	3.89	7530
17,	4.4	9910	9.25	39305	6.4	19550	12.45	69140	6.6	20660	5.9	17010	2.41	2295	2.11	1610	2.02	1430	2.24	1890	2.05	1490	3.42	5415
18,	†5.0	12700	9.2	38900	6.0	17500	11.00	54800	6.3	19015	5.4	14580	2.39	2245	2.09	1570	2.10	1590	2.13	1655	2.04	1470	3.45	5535
19,	*4.4	9910	9.2	38900	5.5	15060	9.4	40550	5.8	16530	5.6	15550	2.35	2150	2.06	1510	2.07	1530	2.10	1590	1.99	1370	3.36	5185
20	*4.1	8505	10.15	47040	5.2	13625	8.6	34250	5.6	15550	5.6	15550	2.17	1735	2.07	1530	2.03	1450	2.08	1550	1.95	1295	*†3.00	3930
21	*4.25	9205	13.55	80730	5.0	12700	7.8	28400	5.4	14580	5.4	14580	2.25	1915	2.15	1695	2.00	1390	2.04	1470	1.99	1370	*3.10	4255
22,	*4.15	8735	14.20	87620	4.8	11770	7.5	26365	5.1	13160	4.9	12235	2.25	1915	2.14	1675	1.97	1335	2.01	1410	1.99	1370	*2.90	3630
23,	*4.25	9205	13.10	75960	4.6	10840	7.4	25700	4.9	12235	4.4	9910	2.39	2245	2.41	2295	1.94	1275	1.98	1350	1.99	1370	*2.90	3630
24,	*4.50	10375	12.65	71220	4.5	10375	7.5	26365	4.7	11305	4.1	8505	2.45	2395	2.51	2545	2.05	1490	2.06	1510	1.99	1370	*3.10	4255
25,	7.6	27035	13.3	78080	4.3	9440	7.2	24385	4.5	10375	4.0	8040	2.53	2595	2.47	2445	2.02	1430	2.09	1570	2.01	1410	*2.90	3630
26,	11.6	60520	14.4	89760	5.4	14580	6.7	21245	4.3	9440	4.4	9910	2.44	2370	2.41	2295	2.05	1490	2.08	1550	2.00	1390	*2.80	3330
27,	12.1	65520	12.35	68100	7.0	23100	6.2	18495	4.1	8505	4.27	9300	2.37	2200	2.29	2005	1.98	1350	2.09	1570	2.02	1430	*2.60	2775
28,	9.75	43525	10.3	48390	9.5	41400	5.8	16530	4.1	8505	3.92	7670	2.35	2150	2.25	1915	1.97	1335	2.09	1570	2.04	1470	*2.60	2775
29	8.0	29800	------	------	9.2	38900	5.6	15550	4.1	8505	3.72	6740	2.35	2150	2.23	1870	1.92	1240	2.14	1675	2.11	1610	*2.50	2520
30,	6.7	21245	------	------	9.0	37300	7.1	23740	3.9	7575	3.57	6060	2.50	2520	2.18	1560	1.90	1200	2.19	1780	2.19	1780	*2.20	1800
31,	5.7	16040	------	------	8.7	35000	------	------	3.8	7110	------	------	2.53	2595	2.15	1695	------	------	2.20	1800	------	------	*2.20	1800

*Estimated on basis of Wilkes-Barre gage.
†Frozen.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT DANVILLE, MONTOUR COUNTY, PENNA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	*†2.60	2775	4.84	11955	16.05	109530	5.49	15010	8.64	34550	5.40	14580	3.35	5145	2.08	1550	1.89	1185	2.12	1630	1.96	1315	3.53	3070
2,	*2.70	3040	4.39	9865	19.20	154540	5.23	13765	8.03	30020	5.16	13435	3.25	4780	2.09	1570	1.96	1315	2.27	1960	1.91	1220	3.50	3070
3,	*2.75	3185	4.23	9110	20.57	179945	5.05	12930	7.26	24775	5.26	13910	3.14	4395	2.07	1530	1.96	1315	2.55	2650	1.85	1120	3.43	3070
4,	*2.70	3040	4.32	9535	20.13	171495	5.69	15990	8.39	32675	5.12	13255	3.09	4220	2.05	1490	1.95	1296	2.50	2520	2.06	1510	3.40	3070
5,	*2.60	2775	4.34	9630	17.77	132800	4.60	10840	8.46	33200	4.89	12190	3.03	4040	2.03	1450	1.95	1295	2.42	2320	2.17	1735	3.37	3070
6	*2.70	3040	4.18	8875	15.75	105750	4.41	9955	8.39	32675	4.94	12425	2.88	3570	1.93	1255	1.95	1295	2.40	2270	2.31	2055	3.33	3070
7,	*2.90	3630	4.12	8600	14.80	94180	4.31	9485	7.34	25305	4.72	11400	2.81	3360	1.98	1350	1.99	1370	2.36	2175	2.41	2295	3.36	3070
8,	*3.10	4255	3.62	6285	16.05	109530	4.23	9110	6.22	18600	4.58	10745	2.84	3450	1.98	1350	2.00	1390	2.30	2030	2.39	2245	3.93	3070
9,	*3.40	5335	3.36	5185	14.90	95330	4.11	8550	5.70	16040	4.92	12330	2.77	3245	2.03	1450	2.01	1410	2.23	1870	2.36	2185	4.35	3070
10,	*3.50	5740	3.46	5580	12.45	69140	4.08	8405	5.49	15010	5.72	16140	2.81	3360	2.13	1655	2.06	1510	2.16	1715	2.33	2100	4.51	3070
11,	*3.60	6195	3.48	5660	10.45	49755	4.05	8270	5.38	14485	5.54	15255	2.68	2985	2.45	2395	2.18	1760	2.09	1570	2.59	2750	4.51	3070
12,	3.72	6740	3.60	6195	9.03	37525	3.95	7805	5.16	13435	5.54	15255	2.59	2750	2.30	2030	2.28	1985	2.06	1510	2.83	3420	4.42	3070
13,	3.66	6470	3.74	6835	8.20	31260	3.87	7435	4.89	12190	5.54	15255	2.53	2595	2.11	1610	2.24	1890	2.06	1510	3.01	3960	4.23	3070
14,	3.69	6605	4.22	9065	7.75	28055	3.74	6835	4.61	10885	5.84	16720	2.53	2595	2.10	1590	2.26	1940	2.04	1470	4.02	8135	4.18	3070
15	3.76	6925	4.46	10190	7.55	26700	3.73	6790	4.44	10095	5.84	16720	2.49	2495	2.06	1510	2.29	2005	2.02	1430	3.73	6790	4.21	3070
16,	3.77	6970	4.30	9440	7.30	25040	3.91	7620	4.22	9065	5.82	16625	2.45	2395	2.04	1470	2.18	1760	2.14	1675	3.57	6060	4.03	3070
17,	3.86	7390	4.43	10050	6.65	20950	3.75	6880	4.02	8135	6.00	17500	2.58	2725	2.03	1450	2.14	1675	2.02	1430	3.41	5375	3.97	3070
18,	4.13	8645	4.64	11025	6.41	19605	4.15	8735	3.80	7110	6.49	20040	2.55	2630	2.02	1430	2.09	1570	2.00	1390	3.37	5220	3.81	3070
19,	4.56	10655	4.74	11490	6.00	17500	4.30	9440	3.76	6925	7.14	23995	2.48	2470	2.03	1450	2.04	1470	1.96	1315	3.37	5220	3.76	3070
20.	5.06	12975	6.76	21605	5.79	16480	4.80	11770	3.64	6375	7.14	23995	2.40	2270	2.07	1530	2.05	1490	1.95	1295	3.33	5070	3.79	3070
21,	6.76	[illegible]	7.51	26430	5.85	16770	5.12	13255	3.68	6560	6.42	19660	2.35	2150	2.09	1570	2.00	1390	1.96	1315	3.17	4500	3.98	3070
22,	10.31	48480	9.66	42760	6.95	22785	5.60	15550	3.68	6560	5.74	16235	2.31	2055	2.03	1450	1.95	1295	1.94	1275	3.19	4565	3.93	3070
23	12.51	69765	8.08	30370	7.71	27785	5.80	16530	3.66	6470	5.00	12700	2.31	2055	1.99	1370	1.94	1275	1.97	1335	3.15	4430	3.92	3070
24,	10.51	50300	6.31	19070	7.81	28470	5.85	16770	3.71	6695	4.58	10745	2.29	2005	1.97	1335	1.91	1220	1.98	1350	3.10	4255	3.95	3070
25,	8.61	34325	5.65	15795	7.87	28885	9.53	41655	4.49	10330	4.16	8780	2.29	2005	1.96	1315	1.89	1185	1.92	1240	3.05	4090	4.31	3070
26,	7.54	26635	5.81	16580	7.82	28540	16.51	115400	5.32	14195	3.99	7995	2.31	2055	1.93	1255	2.15	1695	1.94	1275	3.09	4220	4.47	3070
27,	6.68	21130	6.58	20545	7.95	29445	13.90	84440	8.24	31555	3.82	7200	2.23	1870	1.88	1170	2.24	1890	1.93	1255	3.07	4155	4.49	3070
28,	6.53	20265	8.96	36990	7.64	27305	11.15	56200	8.54	33800	3.64	6375	2.19	1780	1.87	1155	2.12	1630	1.94	1275	3.31	5000	5.35	3070
29,	5.91	17060			6.95	22785	8.70	35000	7.78	28265	3.62	6285	2.11	1610	1.87	1155	2.22	1845	1.87	1155	3.61	6240	5.79	3070
30,	5.41	14630			6.33	19175	8.72	35150	6.48	19985	3.59	6150	2.08	1550	1.82	1075	2.15	1695	1.92	1240	3.57	6060	5.81	3070
31	5.18	13530			5.85	16770			5.86	16820			2.06	1510	1.86	1140			1.92	1240			6.03	3070

*Estimated on basis of Wilkes-Barre gage. Frozen.

†December frozen. Estimated 3070 from Wilkes-Barre run-off.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH SUSQUEHANNA RIVER, AT DANVILLE, MONTOUR COUNTY, PENNA.

1911. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	8.12	30672	6.95	22785	6.80	21850	9.95	45260	5.35	14340	3.22	4672	2.92	3690	2.26	1938	4.65	11070	3.00	3930	4.49	10328	4.72	11398
2,	6.22	18599	5.80	16530	6.15	18240	8.20	31260	4.98	12607	3.15	4430	2.87	3540	2.20	1800	4.20	8970	3.98	7947	4.27	9299	5.25	13860
3,	7.90	29095	5.00	12700	5.30	14109	7.10	23740	4.78	11677	3.12	4324	2.82	3390	2.46	2420	3.75	6880	4.82	11863	4.35	9675	5.00	12700
4,	*12.38	68412	4.55	10605	4.92	12328	6.50	20095	5.15	13390	3.00	3930	2.78	3272	2.32	2078	3.28	4888	4.60	10840	4.51	10422	4.68	11212
5,	11.45	59065	4.20	8970	4.40	9910	6.44	19768	5.34	14292	3.05	4090	2.72	3098	2.18	1758	3.12	4324	4.70	11305	4.46	10189	4.40	9910
6,	9.75	43525	4.10	8505	4.32	9534	6.95	22785	5.00	12700	3.15	4430	2.63	2854	2.13	1653	3.16	4462	4.30	9440	4.24	9158	4.28	9346
7	7.75	28055	3.95	7805	4.12	8598	9.70	43100	4.72	11398	3.08	4190	2.59	2750	2.12	1632	3.40	5335	4.05	8270	4.18	8877	4.10	8505
8,	7.10	23740	3.80	7110	3.88	7482	12.48	69452	4.45	10140	3.01	3962	2.52	2571	2.12	1632	3.40	5335	4.08	8412	4.30	9440	4.02	8133
9.	6.65	20950	3.32	5035	3.60	6195	13.40	79140	4.18	8877	3.24	4780	2.51	2546	2.10	1590	3.30	4960	4.05	8270	4.38	9816	3.88	7482
10,	6.15	18240	3.55	5968	3.50	5740	11.55	60035	4.04	8226	3.69	6604	2.54	2622	2.08	1550	3.88	7482	4.52	10468	4.46	10189	3.88	7482
11,	5.62	15648	3.65	6422	4.08	8412	10.35	48845	3.94	7761	3.45	5535	2.52	2571	2.01	1410	4.78	11677	4.38	9816	4.48	10282	3.90	7575
12,	5.42	14676	3.70	6050	4.50	10375	9.35	40130	3.80	7110	3.85	7340	2.46	2420	1.94	1276	4.52	10463	4.26	9252	4.40	9910	3.98	7947
13,	5.50	15060	3.82	7203	5.90	17010	8.45	33125	3.65	6422	4.50	10375	2.46	2420	2.00	1390	4.72	11398	4.22	9064	4.42	10003	4.38	9816
14,	6.75	21545	3.85	7340	6.65	20950	7.88	28956	3.53	5876	5.72	16138	2.42	2320	2.02	1430	4.30	9440	4.22	9064	4.44	10096	4.55	10605
15,	9.65	42675	3.55	5968	7.45	26030	8.10	30525	3.45	5535	7.52	26499	2.48	2470	2.00	1390	3.98	7947	4.18	8877	4.45	10140	5.10	13160
16	10.80	52950	3.42	5416	8.10	30525	8.60	34250	3.44	5497	7.32	25172	2.40	2270	2.02	1430	3.78	7018	3.92	7668	4.60	10840	6.47	19932
17,	9.65	42675	3.33	5072	7.70	27715	9.05	37695	3.30	4960	6.35	19280	2.42	2320	1.97	1333	3.37	5222	3.80	7110	4.61	10886	7.31	25106
18,	7.50	26365	3.08	6559	6.70	21245	8.22	31408	3.26	4816	5.70	16040	2.48	2470	1.93	1257	3.22	4672	4.07	8366	4.60	10840	7.83	28608
19,	6.60	20660	4.10	8505	6.00	17500	7.53	26566	3.25	4780	5.02	12792	2.41	2295	1.88	1169	3.12	4324	5.28	14005	4.80	11770	7.75	28055
20,	5.65	15795	4.28	9346	5.60	15559	7.62	27171	3.29	4924	4.67	11166	2.40	2270	1.90	1200	3.05	4090	5.68	15942	5.40	14580	6.65	20950
21,	5.32	14196	4.65	11070	5.27	13958	8.35	32375	3.30	4960	4.28	9346	2.44	2370	1.92	1238	2.98	3870	6.00	17500	6.00	17500	6.10	17990
22,	5.15	13390	4.40	9910	5.20	13625	8.74	35300	3.25	4780	4.00	8040	2.51	2546	2.00	1390	2.82	3390	6.14	18192	6.25	18755	6.35	19280
23,	4.90	12235	4.05	8270	5.65	15795	8.70	35000	3.32	5035	3.74	6834	2.55	2648	2.00	1390	2.86	3510	6.62	20777	5.60	15550	6.70	21245
24	4.48	10282	4.02	8133	6.55	20375	8.74	35300	3.18	4531	3.56	6013	2.50	2520	1.94	1276	2.75	3185	7.23	24582	5.30	14100	6.75	21545
25,	4.24	9158	3.88	7482	7.00	23100	8.32	32150	3.10	4255	3.50	5740	2.47	2445	1.94	1276	2.70	3040	7.02	23228	5.15	13390	8.10	30525
26,	4.14	8691	3.95	7805	6.50	20095	7.30	25040	3.08	4190	3.41	5376	2.40	2270	2.25	1915	2.68	2987	6.85	22160	4.95	12470	8.05	30160
27,	4.02	8133	4.28	9346	6.48	19985	6.64	20894	3.46	5578	3.28	4888	2.32	2078	2.42	2320	2.64	2881	6.26	18807	4.82	11863	7.65	27375
28,	4.43	10050	5.50	15060	9.55	41825	6.00	17500	4.00	8040	3.14	4393	2.28	1984	2.35	2150	2.64	2881	5.63	15697	4.75	11535	7.10	23740
29,	5.64	15746	------	------	†14.75	93615	5.00	15550	3.60	6195	3.11	4290	2.25	1915	3.70	6650	2.72	3098	5.17	13486	4.60	10840	6.55	20375
30,	9.20	38900	------	------	14.20	87620	5.30	14100	3.42	5416	2.99	3900	2.24	1892	4.62	10933	2.95	3780	4.88	12142	4.62	10933	6.17	18344
31,	8.15	30890	------	------	12.25	67065	------	------	3.22	4672	------	------	2.25	1915	4.34	9628	------	------	4.66	11119	------	------	5.40	14580

*12.85 feet at 5 P. M. Backwater = 73315 sec.-ft.

†15.1 feet at 5 P. M. = 97690 sec.-ft.

ESTIMATED MONTHLY DISCHARGE OF NORTH BRANCH SUSQUEHANNA RIVER, AT DANVILLE, MONTOUR COUNTY.

(Drainage Area 11,255 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1899.					
April,	60520	13160	30627	2.721	3.036
May,	11770	4600	7460	0.663	0.764
June,	6650	2520	3636	0.323	0.360
July,	4600	2030	2755	0.245	0.282
August,	5740	1390	2126	0.189	0.218
September,	3330	1045	1608	0.143	0.159
October,	1590	1045	1313	0.117	0.135
November,	25040	1590	8473	0.753	0.840
December,	28400	3630	13191	1.172	1.351
a1900.					
February 9-28,	80200	11305	36093	----------	----------
March,	99500	11305	26991	2.398	2.765
April,	50665	15550	29014	2.578	2.877
May,	14340	3930	8065	0.717	0.827
June,	7575	2270	3871	0.344	0.383
July,	3930	1590	2344	0.208	0.240
August,	2520	1045	1528	0.136	0.157
September	1800	830	1155	0.103	0.115
October,	2030	915	1128	0.100	0.115
November,	116570	1390	10891	0.968	1.080
December, 1-16, 26-31,	42675	12700	23537	----------	----------
b1901.					
March 12-31,	121900	20660	54500	----------	----------
April,	99500	20095	36563	3.248	3.624
May,	95915	12700	24078	2.138	2.465
June,	81260	7110	19542	1.736	1.937
July,	6650	2520	4143	0.368	0.425
August,	54985	2775	12080	1.073	1.237
September,	13160	3330	6173	0.548	0.612
October,	8270	3630	5707	0.507	0.585
November	23100	2775	6329	0.562	0.627
December,	222420	7575	38952	3.461	3.990
c1902.					
March,	306180	19550	82239	7.307	8.425
April,	75960	8040	24072	2.139	2.387
May,	9910	3930	6325	0.562	0.648
June,	8970	4600	6229	0.553	0.617
July,	64500	9910	32219	2.863	3.300
August,	35000	4255	11979	1.064	1.227
September,	29445	2520	6212	0.552	0.616
October,	43100	8040	19516	1.734	1.999
November,	23420	5740	9674	0.860	0.960
December,	94180	8970	28735	2.553	2.943

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a Frozen January 1-20; February 1-8, and December 17-25. No estimates made.
b Frozen January 3 to March 11; no estimates made.
c Frozen January 6-8, 13-22; Feb. 2-27. No estimates made.

ESTIMATED MONTHLY DISCHARGE OF NORTH BRANCH SUSQUEHANNA RIVER, AT DANVILLE, MONTOUR COUNTY.

(Drainage Area 11,255 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a 1903.					
March,	136945	21850	61672	5.480	6.318
April	58100	8970	26900	2.390	2.667
May,	8505	3040	4690	0.417	0.481
June,	33875	2520	11611	1.032	1.151
July,	20095	4600	10250	0.911	1.050
August,	92495	5740	14091	1.252	1.443
September,	60520	3930	12792	1.137	1.269
October,	121900	3630	29796	2.647	3.052
November,	46590	6650	13347	1.186	1.324
b 1905.					
April,	63995	10840	25827	2.295	2.560
May,	10375	4960	7166	0.637	0.735
June,	43950	3630	11482	1.020	1.138
July,	15550	3330	6332	0.563	0.649
August,	13625	3630	6985	0.621	0.716
September,	38900	3330	15074	1.339	1.494
October,	22160	4960	9978	0.887	1.023
November,	11305	4600	7049	0.626	0.699
December	76490	7110	22318	1.983	2.286
c 1906.					
January,	60520	8040	18247	1.621	1.869
March,	80200	6650	22402	1.990	2.294
April,	87620	13160	44243	3.931	4.386
May,	46590	6195	13750	1.222	1.409
June,	40550	8505	17557	1.560	1.740
August,	8505	2775	5149	0.457	0.527
September,	7575	1590	3118	0.277	0.309
October,	20660	2520	6733	0.598	0.690
November,	26365	5740	11905	1.058	1.181
December,	27035	5335	13418	1.192	1.374
d 1907.					
January,	69660	9910	32232	2.864	3.301
April,	55730	10840	19497	1.732	1.932
May,	29800	7110	15173	1.348	1.554
June,	10840	3630	6761	0.601	0.670
July,	9910	3630	6183	0.549	0.633
August,	4255	1390	2243	0.199	0.230
September	19550	1200	6756	0.600	0.669
October,	27035	5335	12193	1.083	1.248
November,	60520	9440	21405	1.902	2.122
December,	100110	7575	34872	3.098	3.572

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a Frozen January 12-30; February 21-27; December 12-31. No estimates made. January 31-February 20, water backed up by ice.

b Frozen January 1-March 22. No estimates made.

c Frozen February 5 to 21. No readings taken July 16-31. No estimates made.

d Frozen February 23 to March 9. No estimates made.

ESTIMATED MONTHLY DISCHARGE OF NORTH BRANCH SUSQUEHANNA RIVER, AT DANVILLE, MONTOUR COUNTY.

(Drainage Area 11,255 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a 1908.					
January,	42250	7575	16188	1.438	1.658
March,	119220	13160	50981	4.530	5.223
April,	71740	15060	26686	2.371	2.645
May,	73840	10840	30545	2.714	3.128
June,	13160	3040	5568	0.495	0.552
July,	8970	2270	3532	0.314	0.362
August,	3040	1295	1926	0.171	0.197
September,	1490	870	1005	0.089	0.099
October,	2520	980	1310	0.116	0.134
November,	2520	1590	1905	0.169	0.189
December,	6195	1390	2759	0.245	0.282
b 1909.					
January,	65520	3040	17331	1.540	1.775
February,	89760	6650	38326	3.405	3.545
March,	41400	9440	22864	2.031	2.341
April,	87090	15550	30775	2.734	3.050
May,	131780	7110	32492	2.887	3.328
June,	21245	5740	11432	1.016	1.134
July,	5335	1735	2701	0.240	0.277
August,	2545	1370	1793	0.158	0.182
September,	1590	1140	1366	0.121	0.135
October,	2030	1060	1474	0.131	0.151
November,	1780	1295	1502	0.133	0.148
December,	7530	1780	3273	0.291	0.335
The year,	131780	1060	13777	1.224	16.401
c 1910.					
January,	69765	2775	14649	1.302	1.501
February,	42760	5185	14097	1.253	1.305
March,	179945	16480	56898	5.055	5.828
April,	115400	6790	20852	1.853	2.067
May,	34550	6375	17510	1.556	1.794
June,	23995	6150	13796	1.226	1.368
July,	5145	1510	2778	0.247	0.285
August,	2395	1075	1455	0.129	0.149
September,	2005	1185	1535	0.136	0.152
October,	2650	1155	1603	0.142	0.164
November,	8135	1120	3910	0.347	0.387
December,	----------	----------	3070	0.273	0.315
The year,	179945	1075	13679	1.127	15.315
1911.					
January,	73315	8133	25164	2.236	2.578
February,	22785	5035	8985	0.798	0.831
March,	97690	5740	23431	2.082	2.400
April,	79140	14100	33884	3.011	3.359
May,	14340	4190	7515	0.668	0.770
June,	26499	3900	8486	0.754	0.841
July,	3690	1892	2540	0.226	0.261
August,	10933	1169	2307	0.205	0.236
September,	11677	2881	5753	0.511	0.570
October,	24582	3930	12503	1.111	1.281
November,	18755	8877	11456	1.018	1.136
December,	30525	7482	16676	1.482	1.708
The year,	97690	1169	13225	1.175	15.971

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a Frozen February 2-14. No estimates made.
b January 18-24 and December 10-13, 20-31. Estimated from Wilkes-Barre data.
c December run-off estimated on basis of Wilkes-Barre.

WEST BRANCH SUSQUEHANNA RIVER.

DESCRIPTION OF BASIN.

The West Branch of the Susquehanna river, which joins the North Branch at Northumberland, to form the main Susquehanna river, drains a total area of approximately 6,980 square miles, lying entirely within the State. This branch rises in the west central part of the State, in the northwestern corner of Cambria County, and flows northward a short distance and then turning in a general northeasterly direction, continues to below Renovo, Clinton county, where it takes an easterly course to the mouth of Loyalsock creek, and thence turns southward to its junction with the North Branch at Northumberland. The total length of this stream, from the headwaters to its mouth, is about 226 miles. The West Branch of the Susquehanna river is unique among Pennsylvania rivers, in that it has numerous large tributaries, several of which have basins of 1,000 square miles and over, all of which join the river above Williamsport, which is 41 miles above the mouth.

The headwaters in Cambria and Clearfield counties lie in a rich bituminous coal mining area, the country being thickly settled and dotted with boroughs and villages. Some farming is carried on in this area, and the mountains are partly covered with second growth timber. From Clearfield to Lock Haven the basin is sparsely settled, little farming being carried on, and the country in general is rough and rugged, the hills being well covered with second growth timber. From Lock Haven to the mouth the drainage basin is well settled along the main stream, and most of the tributaries. Considerable farming is carried on in the valleys, but the mountains are rugged and covered with new growth.

The entire drainage basin is mountainous and rugged, and the river from its headwaters follows a winding course, through a narrow channel, hemmed in by the hills and mountains, parallel to and west of the backbone ridge of the Allegheny Mountains, cutting through the mountains as it turns southward at Halls. The slope of the headwaters is steep, the river often falling at the rate of 8 feet per mile, to Keating, but from this point the slope becomes less steep, falling to the mouth at an average rate of about 2½ feet per mile. Only a small section of the northeastern corner of this basin lies within the glacial area. Extensive limestone areas underlie some of the tributaries which lie to the south of the main stream, and in the Allegheny Mountains.

The principal tributaries are Clearfield, Moshannon, Sinnemahoning, Kettle, Bald Eagle, Pine, Lycoming and Loyalsock creeks.

The principal towns in the basin are Williamsport and Lock Haven cities, and many large boroughs and farming and mining villages.

Many domestic water supplies are obtained from the tributaries of the stream, but only a few from the parent stream.

The northern portion of the basin is subject to a mean annual precipitation of 35 to 40 inches, and the southern part from 40 to 45 inches.

The discharge is measured at Renovo and Williamsport, the stations having been established October 1, 1905, and March 1, 1895, respectively.

SUSQUEHANNA BASIN—STATION NO. 8.

WEST BRANCH SUSQUEHANNA RIVER AT RENOVO, PA.

DESCRIPTION OF STATION.

This station was established, by the United States Weather Bureau, on September 1st, 1905, and is located on the Eighth Street Bridge, Renovo, Pa.

The channel is straight for 1,000 feet above and 3,000 feet below the station. Both banks are high and not subject to overflow. The bed is rocky and permanent.

Discharge measurements are taken from the downstream side of the bridge and by wading at a section 2,000 feet above the bridge, at the foot of Third Street. The initial point for soundings is the left end of hand-rail, downstream side.

A standard chain gage is fastened to the upstream hand rail, near the north pier, the length of chain from the bottom of the weight to the marker being 41.10 feet. The elevation of zero is 637.4 feet above mean sea level. Bench mark No. 1 is southwest corner of north abutment of bridge, chiselled in stone face 10 feet above low water mark, established from P. R. R. gage on north pier; elevation 647.4 feet. Bench mark No. 2 is a one inch offset in the upstream corner of the north concrete abutment, one foot above the bottom, with the corner above the projection chiselled out; elevation 8.04 feet above gage datum. Bench mark No. 3 is a chiselled rod seat on a projection in the eleventh course down from the bridge seat on the southwest end of the stonework of the north abutment, six inches below a chiselled arrowhead; elevation 10.77 above gage datum. The gage is read once daily by H. L. Baird.

Gage heights were read on the P. R. R. gage, which was painted on the upstream side of the north pier, by voluntary observers, from July 1st, 1895, to December 31st, 1903. These gage heights are not considered reliable and have, therefore, not been published. From January 1st, 1904, to September 1st, 1905, no readings were taken at this station. From this latter date the readings were taken by the U. S. Weather Bureau observer, but, on account of the unreliability of the gage heights, to January 1st, 1908, due to an error in chain length, no data is published prior to 1908. Since September, 1908, the Water Supply Commission has obtained thirteen discharge measurements, from which a satisfactory rating table has been derived.

The following gage heights have been furnished by the U. S. Weather Bureau:

DISCHARGE MEASUREMENTS OF WEST BRANCH SUSQUEHANNA RIVER, AT RENOVO, CLINTON COUNTY, PENNA.

(Drainage Area 2,990 Square Miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1908.							
1.	Sept. 10,	Grant,	120	133	1.42	—0.72	188	Wading msmt. 2000 feet above bridge.
	1909.							
2.	Feb. 26,	Langenheim & Reckord.	454	4138	6.66	7.76	27550	
3.	Feb. 26,	Langenheim & Reckord.	454	3890	5.85	7.00	22740	
4.	Feb. 27,	Langenheim & Reckord.	454	3535	4.95	6.05	17486	
5.	May 3,	Reckord,	460	4304	6.88	8.23	29600	
6.	May 3,	Reckord.	460	4232	7.18	7.93	30368	
7.	Aug. 12,	Grant,	117	143	1.47	—0.63	210	Wading msmt. 2000 feet above bridge.
	1910.							
8.	June 22,	Langenheim,	417	2290	1.13	1.41	2581	
9.	July 14,	Ryder,	400	1776	0.40	0.15	715	
10.	Nov. 29,	Langenheim,	415	2242	1.09	1.30	2448	
	1911.							
11.	Mar. 21,	Langenheim,	433	3112	2.00	3.00	6219	
12.	Mar. 31,	Reckord,	443	3287	2.52	3.85	8299	
	1912.							
13.	Sept. 8,	Reckord,	426	2724	1.69	2.49	4606	

DISCHARGE TABLE FOR WEST BRANCH SUSQUEHANNA RIVER AT RENOVO, CLINTON COUNTY, FROM JAN. 1, 1908.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
—1.10	80	.80	3230	.70	11670	.50	26200	.30	46050
—1.00	100	.90	3420	.80	12060	.60	26850	.40	46900
—0.90	125	2.00	3620	.90	12460	.70	27500	.50	47750
—.80	155	.10	3820	5.00	12860	.80	28150	.60	48600
—.70	190	.20	4020	.10	13260	.90	28800	.70	49500
—.60	230	.30	4240	.20	13660	8.00	29450	.80	50400
—.50	280	.40	4460	.30	14100	.10	30100	.90	51300
—.40	340	.50	4690	.40	14550	.20	30750	11.00	52250
—.30	400	.60	4930	.50	15000	.30	31400	.10	53200
—.20	470	.70	5180	.60	15500	.40	32100	.20	54150
—.10	540	.80	5440	.70	16000	.50	32800	.30	55100
0.00	620	.90	5710	.80	16500	.60	33500	.40	56050
.10	700	3.00	5980	.90	17000	.70	34200	.50	57000
.20	790	.10	6260	6.00	17500	.80	34900	.60	58000
.30	890	.20	6540	.10	18000	.90	35600	.70	59000
.40	1000	.30	6840	.20	18550	9.00	36300	.80	60000
.50	1120	.40	7140	.30	19100	.10	37000	.90	61000
.60	1250	.50	7440	.40	19660	.20	37700	12.00	62000
.70	1390	.60	7760	.50	20225	.30	38450	.10	63000
.80	1530	.70	8080	.60	20800	.40	39200	.20	64100
.90	1680	.80	8400	.70	21400	.50	39950	.30	65200
1.00	1830	.90	8740	.80	22000	.60	40700	.40	66300
.10	1990	4.00	9080	.90	22600	.70	41450	.50	67400
.20	2150	.10	9420	7.00	23200	.80	42200	.60	68600
.30	2320	.20	9780	.10	23800	.90	42950	.70	69800
.40	2490	.30	10140	.20	24400	10.00	43700	.80	71000
.50	2670	.40	10520	.30	25000	.10	44450	.90	72200
.60	2850	.50	10900	.40	25600	.20	45250	13.00	73400
.70	3040	.60	11280						

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT RENOVO, CLINTON COUNTY, PENNA.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1.	4.7	11700	1.4	2490	1.6	2850	5.6	15500	2.6	4930	5.2	13700	0.4	1000	—0.2	470	—0.7	190	—0.5	280	—0.5	280	—0.6	230
2,	4.1	9420	1.9	3420	1.6	2850	5.0	12900	3.4	7140	4.6	11300	0.4	1000	—0.3	400	—0.7	190	—0.6	230	—0.6	230	—‖0.6	230
3,	3.6	7760	2.2	4020	4.9	12500	4.7	11700	3.8	8400	3.9	8740	0.3	890	—0.3	400	—0.7	190	—0.7	190	—0.7	190	—0.6	230
4,	3.2	6540	1.9	3420	5.1	13300	4.3	10100	4.2	9780	3.5	7440	0.4	1000	—0.4	340	—0.7	190	—0.7	190	—0.7	190	—1.0	100
5,	3.0	5980	1.9	3420	4.4	10500	3.8	8400	4.0	9080	2.9	5710	0.4	1000	—0.4	340	—0.7	190	—0.7	190	—0.7	190	—0.8	455
6,	2.8	5440	2.6	4930	4.0	9080	3.6	7760	3.7	8080	2.4	4460	0.4	1000	0.0	620	—0.7	190	—0.7	190	—0.7	190	—1.1	80
7,	*2.5	4690	2.6	4930	4.6	11300	3.3	6840	3.6	7760	2.3	4240	0.3	890	+0.3	890	—0.7	190	—0.7	190	—0.7	190	—1.0	100
8,	*2.2	4020	2.6	4930	7.1	23800	3.0	5980	6.5	20200	2.0	3620	0.2	790	0.1	700	—0.7	190	—0.7	190	—0.7	190	—0.6	230
9,	*2.0	3620	2.6	4930	6.0	17500	4.0	9080	6.9	22600	1.8	3230	0.0	620	0.3	890	—0.7	190	—0.7	190	—0.8	155	—0.6	230
10,	*1.8	3230	2.6	4930	5.8	16500	5.5	15000	6.4	19700	1.8	3230	0.0	620	0.5	1120	—0.7	190	—0.8	155	—0.8	155	—0.6	230
11,	1.5	2670	2.6	4930	4.9	12500	4.1	9420	5.4	14600	1.7	3040	0.0	620	0.5	1120	—0.7	190	—0.8	155	—0.8	155	—0.6	230
12,	1.5	2670	2.6	4930	5.8	16500	4.6	11300	4.9	12500	1.6	2850	—0.1	540	0.0	620	—0.7	190	—0.7	190	—0.7	190	—0.4	340
13,	5.2	14100	2.6	4930	7.4	25600	4.2	9780	4.1	9420	1.5	2670	—0.1	540	0.0	620	—0.7	190	0.8	155	—0.7	190	—0.4	340
14,	6.5	20200	2.6	4930	9.9	43000	3.7	8080	3.8	8400	1.4	2490	—0.1	540	—0.1	540	—0.7	190	—0.8	155	—0.7	190	—0.3	400
15,	5.4	14600	3.2	6540	10.1	44400	3.4	7140	3.9	8740	1.2	2150	+0.1	700	—0.2	470	—0.8	155	—0.8	155	—0.9	125	—0.3	400
16,	4.4	10500	13.0	73400	12.9	72200	4.3	10100	5.3	14100	1.9	3420	0.4	1000	—0.3	400	—0.8	155	—0.8	155	—0.8	155	—0.3	400
17,	3.6	7760	9.0	36300	10.1	44400	4.5	10900	5.4	14600	1.6	2850	0.6	1250	—0.3	400	—0.8	155	—0.8	155	—0.8	155	—0.3	400
18,	3.4	7140	6.2	18600	7.8	28200	4.1	9420	6.4	19700	1.4	2490	0.3	890	—0.2	470	—0.9	125	—0.8	155	—0.6	230	—0.3	400
19,	3.1	6260	5.1	13300	10.2	45200	4.6	11300	5.8	16500	1.2	2150	0.1	700	—0.1	540	—0.9	125	—0.8	155	—0.6	230	—0.3	400
20,	2.6	4930	4.4	10500	13.0	73400	5.6	15500	6.8	22000	1.0	1830	—0.1	540	+0.1	700	—0.9	125	—0.8	155	—0.6	230	†3.1	6260
21,	2.4	4460	3.6	7760	8.7	34200	5.1	13300	7.8	28200	0.6	1250	—0.1	540	0.0	620	—0.9	125	—0.8	155	—0.6	230	2.5	4690
22,	2.3	4240	3.4	7140	6.6	20800	4.6	11300	6.8	22000	0.6	1250	+0.4	1000	0.0	620	—0.9	125	—0.8	155	—0.6	230	1.1	1990
23,	2.3	4240	3.0	5980	6.1	18000	4.1	9420	8.6	33500	0.4	1000	1.6	2850	—0.1	540	—0.9	125	—0.8	155	—0.6	230	‡0.6	1250
24,	2.3	4240	2.7	5180	5.9	17000	3.6	7760	6.9	22600	0.6	1250	1.1	1990	0.0	620	—0.9	125	—0.8	155	—0.6	230	0.3	890
25,	2.0	3620	2.4	4460	6.9	22600	3.3	6840	5.8	16500	0.9	1680	0.7	1390	—0.2	470	—1.0	100	—0.8	155	—0.6	230	0.2	790
26,	1.8	3230	2.4	4460	6.6	20800	3.3	6840	4.9	12500	0.7	1390	0.7	1390	—0.2	470	—1.0	100	—0.7	190	—0.5	280	0.6	1250
27,	2.1	3820	2.0	3620	7.1	23800	3.0	5980	4.6	11300	0.6	1250	0.7	1390	—0.3	400	—1.0	100	—0.6	230	—0.6	230	0.6	1250
28,	2.2	4020	2.0	3620	8.1	30100	2.8	5440	4.5	10900	0.6	1250	0.6	1250	—0.4	340	—1.0	100	—0.5	280	—0.6	230	0.6	1250
29,	2.4	4460	1.6	2850	8.4	32100	2.6	4930	3.9	8740	0.5	1120	0.3	890	—0.4	340	—0.6	230	—0.5	280	—0.6	230	0.6	1250
30,	2.4	4460	-----	-----	7.9	28800	2.4	4460	4.5	10900	0.4	1000	0.1	700	—0.5	280	—0.4	340	—0.5	280	—0.6	230	0.8	1530
31,	1.4	2490	-----	-----	6.6	20800	-----	-----	5.8	16500	-----	-----	—0.1	540	—0.6	230	-----	-----	—0.5	280	-----	-----	0.8	1530

*Interpolated.
**River frozen. Gage read to top of ice.
†Ice went out at 3 p. m. at 5.0 feet gage height=12900 second feet.
‡River frozen.
‖River frozen. Gage read to top of ice.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT RENOVO, CLINTON COUNTY, PENNA.

1909.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	*0.6	1250	2.4	4460	4.4	10500	2.9	5710	14.2	88600	1.6	2850	1.7	3040	—0.2	470	—0.65	210	—0.55	255	—0.4	340	—0.4	340
2,	0.6	1250	2.4	4460	3.9	8740	2.7	5180	11.9	61000	1.4	2490	1.4	2490	—0.2	470	—0.65	210	—0.65	210	—0.5	280	—0.5	280
3,	0.6	1250	2.7	5180	3.7	8080	2.6	4930	8.8	34900	1.3	2320	1.2	2150	—0.1	540	—0.65	210	—0.75	172	—0.5	280	—0.5	280
4,	1.0	1830	2.9	5710	4.5	10900	2.5	4690	7.1	23800	1.2	2150	1.0	1830	—0.1	540	—0.65	210	—0.85	140	—0.5	280	—0.6	230
5,	1.4	2490	2.9	5710	4.1	9420	2.5	4690	6.4	19700	2.6	4930	0.9	1680	—0.2	470	—0.65	210	—0.85	140	—0.5	280	—0.7	190
6,	3.5	7440	2.6	4930	3.5	7440	2.4	4460	5.6	15500	3.0	5980	0.7	1390	—0.3	400	—0.65	210	—0.85	140	—0.5	280	—0.7	190
7,	3.8	8400	5.1	13300	3.2	6540	3.7	8080	4.9	12500	3.3	6840	0.6	1250	—0.4	340	—0.65	210	—0.85	140	—0.6	230	—0.6	230
8,	3.5	7440	4.6	11300	3.0	5980	5.6	15500	4.2	9780	3.4	7140	0.5	1120	—0.5	280	—0.75	172	—0.85	140	—0.6	230	—0.7	190
9,	2.4	4460	3.9	8740	2.8	5440	4.8	12100	3.8	8400	2.4	4460	0.4	1000	—0.5	280	—0.75	172	—0.85	140	—0.6	230	—0.7	190
10,	1.8	3230	3.6	7760	4.1	9420	4.4	10500	3.6	7760	2.3	4240	0.3	890	—0.6	230	—0.65	210	—0.95	112	—0.5	280	—0.7	190
11,	2.0	3620	3.3	6840	3.6	7760	3.8	8400	3.6	7760	3.4	7140	0.1	700	—0.6	230	—0.65	210	—0.95	112	—0.5	280	—0.5	280
12,	1.8	3230	3.2	6540	5.0	12900	3.4	7140	3.6	7760	3.8	8400	0.1	700	—0.6	230	—0.65	210	—0.55	255	—0.5	280	—0.5	280
13,	1.4	2490	3.0	5980	4.0	9080	3.9	8740	3.3	6840	3.2	6540	0.1	700	—0.6	230	—0.65	210	+0.25	840	—0.6	230	—0.5	280
14,	1.8	3230	3.0	5980	3.8	8400	4.6	11300	3.1	6260	4.7	11700	0.1	700	—0.65	210	—0.65	210	+0.05	660	—0.6	230	+0.1	700
15,	1.9	3420	5.1	13300	3.6	7760	8.6	33500	2.8	5440	4.3	10100	0.0	620	—0.65	210	—0.75	172	—0.05	580	—0.6	230	1.2	2150
16,	1.7	3040	8.6	33500	3.0	5980	6.7	21400	2.6	4930	3.5	7440	0.4	1000	—0.55	255	—0.75	172	—0.15	505	—0.6	230	0.9	1680
17,	1.7	3040	8.5	32800	2.9	5710	5.5	15000	2.4	4460	3.2	6540	0.2	790	—0.35	370	—0.75	172	—0.25	435	—0.5	280	0.5	1120
18,	†	2290	7.2	24400	2.6	4930	4.6	11300	2.2	4020	2.7	5180	0.2	790	—0.35	370	—0.85	140	—0.35	370	—0.5	280	0.2	790
19,	†	2290	5.9	17000	2.4	4460	4.1	9420	2.0	3620	2.4	4460	0.1	700	—0.25	435	—0.85	140	—0.45	310	—0.5	280	0.4	1000
20,	†	2290	5.4	14600	2.1	3820	3.6	7760	1.7	3040	2.1	3820	0.0	620	—0.25	435	—0.85	140	—0.45	310	—0.5	280	0.4	1000
21,	†	2290	5.3	14100	2.1	3820	3.0	5980	1.7	3040	1.8	3230	—0.1	540	—0.25	435	—0.85	140	—0.45	310	—0.4	340	0.5	1120
22,	†	2290	5.1	13300	2.0	3620	3.6	7760	1.7	3040	1.5	2670	—0.2	470	—0.35	370	—0.85	140	—0.45	310	—0.4	340	0.3	890
23,	†	2290	4.4	10500	1.9	3420	5.1	13300	1.7	3040	1.4	2490	0.0	620	—0.45	310	—0.75	172	—0.35	370	—0.3	400	0.2	790
24,	‡3.1	6260	7.1	23800	1.8	3230	5.0	12900	1.7	3040	1.6	2850	1.2	2150	—0.55	255	—0.75	172	—0.35	370	—0.2	470	0.2	790
25,	8.8	34900	10.2	45200	1.8	3230	4.2	9780	1.6	2850	1.9	3420	1.1	1990	—0.55	255	—0.75	172	—0.15	505	—0.2	470	0.2	790
26,	6.9	22600	8.0	29400	3.1	6260	4.0	9080	1.4	2490	1.9	3420	0.6	1250	—0.65	210	—0.65	210	+0.05	660	—0.3	400	0.0	620
27,	4.9	12500	6.3	19100	3.9	8740	3.8	8400	1.2	2150	2.1	3820	0.4	1000	—0.55	255	—0.45	310	0.05	660	—0.3	400	0.0	620
28,	4.4	10500	5.2	13700	3.7	8080	3.7	8080	1.4	2490	2.1	3820	0.2	790	—0.65	210	—0.45	310	0.15	745	—0.3	400	0.0	620
29,	3.4	7140	......	......	3.5	7440	3.7	8080	2.1	3820	1.9	3420	0.1	700	—0.55	255	—0.45	310	0.05	660	—0.4	340	0.0	620
30,	3.2	6540	......	......	3.4	7140	§12.6	68600	2.1	3820	2.1	3820	0.0	620	—0.65	210	—0.55	255	—0.15	505	—0.4	340	0.0	620
31,	2.8	5440	......	......	3.2	6540	......	......	1.8	3230	......	......	—0.1	540	—0.65	210	......	......	—0.25	435	......	......	0.0	620

* River frozen.
† River gorged January 18-23 (Discharge estimated from Williamsport data.)
‡ Ice went out.
§ Maximum 15.5 at 4:00 p. m.=101000 sec.-ft. estimated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT RENOVO, CLINTON COUNTY, PENNA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	0.0	620	------	3470	11.9	61000	2.4	4460	4.0	9080	1.7	3040	0.5	1120	—0.3	400	—0.7	190	0.8	1530	—0.2	470	1.7	3040
2,	0.0	620	------	3470	11.2	54200	2.1	3820	3.5	7440	1.6	2850	0.5	1120	—0.3	400	—0.7	190	0.5	1120	—0.3	400	1.5	2670
3,	0.0	620	------	3470	11.6	58000	1.9	3420	3.2	6540	1.7	3040	0.4	1000	—0.4	340	—0.6	230	0.4	1000	—0.2	470	1.3	2320
4,	0.0	620	------	3470	10.0	43700	1.7	3040	3.1	6260	1.7	3040	0.3	890	—0.4	340	+0.6	1250	0.2	790	—0.1	540	1.0	1830
5,	0.0	620	------	3470	9.0	36300	1.8	3230	3.0	5980	1.5	2670	0.2	790	—0.5	280	0.8	1530	0.1	700	—0.1	540	1.0	1830
6,	0.8	1530	------	3470	8.7	34200	1.9	3420	2.9	5710	1.5	2670	0.2	790	—0.5	280	1.5	2670	0.0	620	—0.1	540	0.8	1530
7,	0.8	1530	------	3470	10.1	44400	2.0	3620	2.6	4950	1.8	3230	0.1	700	—0.6	230	1.0	1830	0.0	620	—0.1	540	------	650
8,	0.8	1530	------	3470	9.5	40000	1.7	3040	2.4	4460	1.9	3420	0.1	700	—0.7	190	0.6	1250	0.0	620	—0.2	470	------	650
9,	0.8	1530	------	3470	7.3	25000	1.6	2850	2.2	4020	1.7	3040	0.3	890	—0.6	230	0.5	1120	—0.1	540	—0.2	470	------	650
10,	0.8	1530	------	3470	6.0	17500	1.5	2670	2.1	3820	1.7	3040	0.2	790	—0.6	230	0.3	890	—0.2	470	—0.2	470	------	650
11,	0.8	1530	------	3470	5.1	13300	1.3	2320	2.0	3620	2.0	3620	0.1	700	—0.4	340	1.1	1990	—0.3	400	—0.2	470	------	650
12,	0.8	1530	------	3470	4.6	11300	1.3	2320	1.8	3230	2.9	5710	0.3	890	—0.4	340	0.7	1390	—0.3	400	—0.2	470	------	650
13,	0.8	1530	------	3470	4.3	10100	1.2	2150	1.6	2850	3.1	6260	0.6	1250	—0.4	340	0.4	1000	—0.3	400	—0.2	470	------	650
14,	0.8	1530	------	3470	4.0	9080	1.1	1990	1.5	2670	2.9	5710	0.2	790	—0.5	280	0.2	790	—0.4	340	0.0	620	------	650
15,	0.8	1530	------	3470	3.8	8400	1.0	1830	1.5	2670	2.6	4930	0.1	700	—0.5	280	0.1	700	—0.4	340	0.0	620	------	650
16,	0.8	1530	------	3470	3.4	7140	1.0	1830	1.3	2320	2.4	4460	0.0	620	—0.5	280	0.0	620	—0.4	340	0.1	700	------	650
17,	0.8	1530	------	3470	3.2	6540	1.2	2150	1.1	1990	2.4	4460	0.0	620	—0.5	280	—0.2	470	—0.5	280	0.2	790	------	650
18,	0.8	1530	------	3470	3.1	6260	1.6	2850	1.1	1990	2.3	4240	0.5	1120	—0.6	230	—0.2	470	—0.5	280	0.2	790	------	650
19,	1.1	1990	------	3470	3.0	5980	3.8	8400	1.1	1990	2.2	4020	0.4	1000	—0.4	340	—0.3	400	—0.5	280	0.2	790	------	650
20,	6.0	17500	------	3470	3.3	6840	4.8	12100	1.1	1990	2.0	3620	0.2	790	—0.5	280	—0.3	400	—0.5	280	0.2	790	------	650
21,	4.5	10900	------	3470	5.1	13300	5.3	14100	1.1	1990	1.7	3040	0.0	620	—0.4	340	—0.4	340	0.5	280	0.2	790	------	650
22,	8.7	34200	------	3470	5.1	13300	5.3	14100	1.4	2490	1.5	2670	—0.1	540	—0.5	280	—0.4	340	—0.5	280	0.0	620	------	650
23,	8.1	30100	------	3470	4.8	12100	4.8	12100	1.4	2490	1.3	2320	—0.1	540	—0.5	280	—0.5	280	—0.3	400	0.0	620	------	650
24,	5.8	16500	------	3470	4.8	12100	4.7	11700	1.6	2850	1.0	1830	—0.2	470	—0.5	280	—0.5	280	+0.3	890	0.0	620	------	650
25,	4.6	11300	------	3470	4.9	12500	7.5	26200	2.0	3620	0.9	1680	—0.2	470	—0.5	280	—0.3	400	0.0	620	0.3	890	------	650
26,	3.8	8400	------	3470	5.0	12900	9.7	41400	2.2	4020	0.7	1390	—0.2	470	—0.5	280	+1.5	2670	0.0	620	0.8	1530	------	650
27,	3.1	6260	------	3470	4.2	9780	8.2	30800	2.4	4460	0.6	1250	—0.3	400	—0.4	340	1.9	3420	0.1	700	1.2	2150	------	650
28,	2.9	5710	------	3470	3.6	7760	6.4	19700	2.2	4020	0.6	1250	—0.3	400	—0.6	230	1.7	3040	0.1	700	1.2	2150	------	650
29,	3.0	5980	------	------	3.1	6260	5.2	13700	2.0	3620	0.6	1250	—0.3	400	—0.5	280	1.5	2670	0.0	620	1.4	2490	------	650
30,	2.5	4690	------	------	2.8	5440	4.7	11700	1.8	3230	0.6	1250	—0.2	470	—0.6	230	1.1	1990	0.0	620	1.5	2670	------	650
31,	2.2	4020	------	------	2.6	4930	------	------	1.8	3230	------	------	—0.2	470	—0.6	230	------	------	—0.1	540	------	------	5.9	17000

February 7-17 inclusive, frozen. February 18-27 inclusive, ice gorged. Discharge estimated for entire month from Willliamsport data. December 7-30 inclusive, frozen. Discharge estimated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT RENOVO, CLINTON COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.7	11700	4.2	9780	3.0	5980	4.8	12100	2.8	5440	1.0	1830	0.6	1250	—0.1	540	2.7	5180	4.7	11700	1.6	2850	2.7	5180
2,	4.2	9780	3.9	8740	2.9	5710	4.8	12100	2.8	5440	1.0	1830	0.5	1120	—0.1	540	2.0	3620	*11.15	53700	1.6	2850	2.7	5180
3,	4.5	10900	3.2	6540	2.8	5440	3.0	5980	2.7	5180	1.0	1830	0.5	1120	0.0	620	1.6	2850	10.4	46900	1.6	2850	2.7	5180
4,	5.4	14600	2.9	5710	2.8	5440	2.8	5440	2.5	4690	1.0	1830	0.5	1120	0.1	700	1.2	2150	6.9	22600	1.5	2670	2.4	4460
5,	4.9	12500	2.7	5180	2.7	5180	2.9	5710	2.3	4240	1.2	2150	0.4	1000	0.1	700	0.9	1680	5.6	15500	1.4	2490	2.3	4240
6,	4.0	9080	2.5	4690	2.7	5180	4.6	11300	2.1	3820	1.0	1830	0.3	890	0.1	700	0.9	1680	4.5	10900	1.2	2150	1.8	3230
7,	3.8	8400	2.5	4690	2.1	3820	5.8	16500	2.0	3620	0.8	1530	0.3	890	0.1	700	2.3	4240	4.2	9780	1.5	2670	1.4	2490
8,	3.3	6840	2.1	3820	1.9	3420	5.8	16500	1.9	3420	0.8	1530	0.4	1000	—0.1	540	1.9	3420	6.2	18600	1.7	3040	1.9	3420
9,	3.9	8740	2.0	3620	1.8	3230	5.5	15000	1.8	3230	0.5	1120	0.3	890	—0.1	540	2.0	3620	5.2	13700	2.0	3620	2.4	4460
10,	3.6	7760	1.9	3420	1.6	2850	5.1	13300	1.8	3230	0.4	1000	0.3	890	—0.2	470	7.3	25000	4.6	11300	2.4	4460	2.1	3820
11,	2.8	5440	1.7	3040	1.5	2670	4.8	12100	1.6	2850	0.6	1250	0.2	790	—0.3	400	5.2	13700	3.9	8740	2.4	4460	2.1	3820
12,	2.3	4240	1.6	2850	2.6	4930	4.4	10500	1.5	2670	0.9	1680	0.2	790	—0.5	280	3.8	8400	3.6	7760	2.8	5440	2.3	4240
13.	5.4	14600	1.5	2670	2.5	4690	4.0	9080	1.5	2670	1.0	1830	0.2	790	—0.6	230	3.0	5980	3.0	5980	3.0	5980	3.0	5980
14,	6.9	22600	1.5	2670	2.5	4690	3.8	8400	1.4	2490	3.3	6840	0.2	790	—0.6	230	2.6	4930	2.7	5180	3.0	5980	2.9	5710
15,	12.0	62000	1.5	2670	3.1	6260	5.3	14100	1.4	2490	2.6	4930	0.2	790	—0.6	230	2.0	3620	2.4	4460	3.0	5980	4.0	9080
16,	9.5	40000	1.4	2490	3.1	6260	5.3	14100	1.3	2320	2.5	4690	0.4	1000	—0.5	280	7.1	23800	2.3	4240	3.3	6840	4.7	11700
17,	6.8	22000	3.0	5980	2.9	5710	4.7	11700	1.3	2320	2.3	4240	0.3	890	+0.6	1250	6.7	21400	2.1	3820	3.3	6840	5.5	15000
18,	5.3	14100	3.0	5980	2.5	4690	4.2	9780	1.2	2150	2.0	3620	0.2	790	0.1	700	5.4	14600	2.0	3620	3.4	7140	6.6	20800
19,	4.4	10500	2.8	5440	2.5	4690	3.7	8080	1.1	1990	1.7	3040	0.1	700	—0.1	540	3.7	8080	3.2	6540	3.5	7440	6.0	17500
20,	3.8	8400	2.8	5440	2.8	5440	3.8	8400	1.2	2150	1.5	2670	0.2	790	—0.2	470	3.1	6260	3.0	5980	5.3	14100	5.2	13700
21,	3.3	6840	2.8	5440	2.9	5710	5.8	16500	1.0	1830	1.3	2320	0.2	790	—0.3	400	2.6	4930	3.2	6540	5.0	12900	4.3	10100
22,	3.1	6260	2.5	4690	2.9	5710	5.8	16500	1.0	1830	1.2	2150	0.2	790	—0.4	340	2.3	4240	2.9	5710	3.5	7440	3.8	8400
23,	2.8	5440	2.6	4930	3.1	6260	5.3	14100	1.0	1830	0.9	1680	0.0	620	—0.5	280	2.0	3620	3.0	5980	3.1	6260	3.8	8400
24,	2.4	4460	2.6	4930	3.[illegible]	6840	5.3	14100	1.0	1830	1.0	1830	0.0	620	—0.5	280	1.8	3230	2.8	5440	3.0	5980	3.4	7140
25,	2.1	3820	2.4	4460	3.2	6540	4.7	11700	1.1	1990	1.0	1830	0.1	700	—0.3	400	1.7	3040	2.5	4690	3.0	5980	3.0	5980
26,	1.8	3230	2.6	4930	2.9	5710	4.3	10100	1.1	1990	0.7	1390	—0.1	540	+1.7	3040	1.5	2670	2.2	4020	3.0	5980	3.0	5980
27,	1.9	3420	2.7	5180	2.9	5710	4.1	9420	1.0	1830	0.8	1530	0.0	620	1.5	2670	1.3	2320	2.0	3620	3.0	5980	2.8	5440
28,	2.8	5440	2.7	5180	5.2	13700	3.5	7440	1.0	1830	1.0	1830	0.1	700	1.0	1830	1.3	2320	2.0	3620	2.9	5710	2.8	5440
29,	5.7	16000	------	------	5.0	12900	3.1	6260	1.0	1830	1.0	1830	0.0	620	4.1	9420	1.4	2490	1.9	3420	2.9	5710	2.8	5440
30.	5.3	14100	------	------	5.0	12900	2.9	5710	1.0	1830	0.8	1530	0.0	620	4.2	9780	1.1	9420	1.8	3230	2.9	5710	2.8	5440
31,	4.9	12500	------	------	4.9	12500	------	------	1.0	1830	------	------	0.0	620	3.5	7440	------	------	1.6	2850	------	------	2.8	5440

*Maximum 13.1 at 4 p. m.—74600 sec.-ft.

ESTIMATED MONTHLY DISCHARGE OF WEST BRANCH SUSQUEHANNA RIVER AT RENOVO, CLINTON COUNTY.

(Drainage Area 2,990 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1908.					
January,	20200	2490	6340	2.120	2.444
February,	73400	2490	9130	3.054	3.293
March	73400	2850	25600	8.562	9.871
April,	15500	4460	9420	3.150	3.514
May,	33500	4930	14600	4.883	5.630
June,	13700	1000	3470	1.161	1.295
July,	2850	540	970	0.324	0.373
August,	1120	230	548	0.183	0.211
September,	340	100	166	0.056	0.063
October,	280	155	190	0.064	0.074
November,	280	125	205	0.069	0.077
December,	12900	80	937	0.313	0.361
The year,	73400	80	5965	1.995	27.206
1909.					
January,	34900	1250	5830	1.950	2.248
February,	45200	4460	14300	4.783	4.981
March,	12900	3230	6930	2.318	2.673
April,	101000	4460	12100	4.047	4.515
May,	88600	2150	11900	3.980	4.589
June,	11700	2150	4920	1.645	1.836
July,	3040	470	1120	0.375	0.432
August,	540	210	322	0.108	0.125
September,	310	140	200	0.067	0.075
October,	840	112	371	0.124	0.143
November,	470	230	307	0.103	0.115
December,	2150	190	635	0.212	0.244
The year,	101000	112	4910	1.643	21.976
[a]1910.					
January,	62000	3230	12400	4.147	4.781
February,	--------	--------	3470	1.161	1.209
March,	61000	4930	19700	6.589	7.597
April,	41400	1830	8900	2.977	3.322
May,	9080	1990	3860	1.291	1.488
June,	6200	1250	3170	1.060	1.183
July,	1250	400	726	0.243	0.280
August,	400	190	280	0.097	0.112
September,	3420	190	1160	0.388	0.433
October	1530	280	568	0.190	0.219
November,	2670	400	865	0.289	0.323
December,	17000	------------	1480	0.495	0.570
The year,	--------	190	4167	1.394	18.980
1911.					
January,	62000	3230	12400	4.147	4.781
February,	9780	2490	4830	1.615	1.682
March,	13700	2670	6150	2.057	2.371
April,	16500	5440	11100	3.712	4.141
May,	5440	1830	2800	0.936	1.079
June,	6840	1000	2310	0.773	0.862
July,	1250	540	824	0.276	0.318
August,	9780	230	1500	0.502	0.578
September	25000	1680	6750	2.258	2.519
October,	74600	2850	10300	3.445	3.972
November,	14100	2150	5580	1.866	2.082
December,	20800	2490	7170	2.398	2.765
The year,	74600	230	5980	1.999	27.150

[a] February 7th to 17th, frozen: February 18th to 27th, ice gorged; discharge estimated for entire month from Williamsport data, at 3470 second-feet constant. December 7th to 30th, frozen; discharge estimated during this period from Williamsport data at 650 second-feet constant.

BALD EAGLE CREEK.

DESCRIPTION OF BASIN.

Bald Eagle creek, a large tributary of the West Branch of the Susquehanna river in Centre and Clinton counties, drains an area of approximately 780 square miles. Rising on the southern boundary in the western part of Centre county, it flows northeasterly through an agricultural valley, the adjacent hills being covered with second growth timber. The valley gradually widens to a considerable breadth as the stream enters Clinton county, continuing to its mouth at Lock Haven, the total length being about 50 miles, and the watershed oval in shape. The valleys in this basin are extensively farmed, and contain numerous boroughs and villages, while the bordering ridges are nearly all covered with heavy second growth timber. This creek rises at an elevation of approximately 1,110 feet and in a distance of about 23 miles to Milesburg, falls at the rate of 18 feet per mile; from this point to the mouth the fall is approximately 5 feet per mile. The principal tributaries are Fishing, Beech and Spring creeks. Spring and Fishing creeks enter from the south, draining a limestone section, and their well maintained dry weather flow aids largely in making the discharge of Bald Eagle creek, in such seasons, a most important affluent of the West Branch. Many of the smaller tributaries are used for domestic water supply, nearly all the boroughs and larger villages being so equipped.

The mean annual precipitation over the greater portion of the watershed is from 40 to 45 inches.

The Water Supply Commission of Pennsylvania maintains four gaging stations in this basin; at Catanea, one mile above the mouth; at Beech Creek Station; at Milesburg, and on Spring creek near Bellefonte. The station at Castanea is influenced by backwater from the West Branch of Susquhanna river during medium and high stages, and only the low-water discharge is available at this station. The discharge measurements at Castanea will be found on page 918.

SUSQUEHANNA BASIN- STATION NO. 9.

BALD EAGLE CREEK AT MILESBURG.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania on February 6, 1911, at the Pennsylvania Railroad Bridge No. 53, over Bald Eagle creek, at Milesburg, 300 yards above the mouth of Spring creek.

The channel above the station is almost straight for 300 feet, while below the station there is a slight bend toward the northwest for about 500 feet. The right bank is high, steep, and rocky; the left bank is low, but the railroad embankment prevents flood water going around the bridge. The flood channel under the bridge is 115.5 feet wide, abutment to abutment. The bed of the creek consists of gravel and stones, and is fairly permanent.

Discharge measurements are taken from the downstream side of the railroad bridge; the initial point for soundings being the face of the left abutment under downstream guard-rail along the tracks.

A ten foot staff gage is attached to the downstream side of the pier, facing to the left. The elevation of zero is arbitrary datum. Bench Mark No. 1 is cross "X" on top of 4th step from top of left downstream wingwall, 0.9 ft. in from end of step, elevation 6.655 ft. above gage datum. The gage is read twice daily by P. H. Haupt.

Since the establishment of this station, 4 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF BALD EAGLE CREEK, AT MILESBURG, CENTRE COUNTY, PENNA.

(Drainage Area 140 Square Miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	per Ft. sec.	Feet.	Sec.-ft.	
	1911.							
1.	Mar. 22,	Langenheim,	83	169	0.83	1.2	140	
2.	July 23,	do	36	10	0.90	0.40	8.9	Wading msmt.
	1912.							
3.	May 22,	Reckord & Boehringer,	85	213	0.71	1.43	152	0.6 msmt.
4.	Oct. 6,	Langenheim,	80	153	0.32	0.62	48	

Gaging Station on Bald Eagle Creek, at Milesburg, Centre County.

DISCHARGE TABLE FOR BALD EAGLE CREEK, AT MILESBURG, CENTRE COUNTY, FROM FEB. 6, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
.10	1	.20	125	.20	470	.20	1220	.20	2580
.20	3	.30	145	.30	525	.30	1340	.30	2740
.30	6	.40	170	.40	580	.40	1460	.40	2900
.40	13	.50	195	.50	640	.50	1590	.50	3060
.50	21	.60	225	.60	700	.60	1720	.60	3220
.60	31	.70	260	.70	770	.70	1850	.70	3390
.70	43	.80	295	.80	840	.80	1990	.80	3560
.80	57	.90	335	.90	920	.90	2130	.90	3730
.90	71	2.00	375	3.00	1010	4.00	2280	5.00	3900
1.00	87	.10	420	.10	1110	.10	2430		
.10	105								

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF BALD EAGLE CREEK AT MILESBURG, CENTRE COUNTY, PENNA.

1911.	FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	1.25	135	1.46	185	1.18	121	0.46	18	0.30	6	0.20	3	1.81	299	1.88	327	1.15	115	1.01	89
2,	------	------	1.28	141	1.34	155	1.45	182	0.42	15	0.27	5	0.17	2	1.32	150	‡7.60	§9780	1.02	91	0.98	84
3,	------	------	1.18	121	1.26	137	1.11	107	0.42	15	0.26	5	0.64	36	1.02	91	3.04	1050	0.94	77	0.96	81
4,	------	------	1.12	109	1.28	141	0.99	85	0.40	13	0.22	4	*3.44	1510	0.82	60	2.41	586	0.94	77	1.02	91
5,	------	------	1.01	89	1.84	311	0.95	79	0.98	84	0.20	3	1.55	210	0.74	49	1.94	351	0.94	77	1.05	96
6,	0.95	79	0.96	81	2.24	492	0.90	71	1.00	87	0.20	3	0.95	79	2.01	380	1.64	239	1.02	91	1.08	101
7,	1.10	105	0.86	65	2.18	460	0.82	60	0.75	50	0.20	3	0.70	43	1.28	141	3.84	2050	2.12	430	1.18	121
8,	1.15	115	0.94	77	1.92	343	0.80	57	0.62	33	0.22	4	0.48	19	1.11	107	2.52	652	1.60	225	1.08	101
9,	1.15	115	0.94	77	1.95	355	0.80	57	0.52	23	0.31	7	0.45	17	†5.50	§4760	2.12	430	1.44	180	1.05	96
10,	1.15	115	1.64	239	1.85	315	0.80	57	0.54	25	0.27	5	0.36	10	2.90	920	1.82	303	1.37	162	1.18	121
11,	1.20	125	1.68	253	1.68	253	0.79	56	0.62	33	0.26	5	0.26	5	2.00	375	1.74	274	1.30	145	1.11	107
12,	1.20	125	1.56	213	1.58	219	0.74	49	1.61	228	0.25	4	0.24	4	1.55	210	1.54	207	1.31	148	1.08	101
13,	1.28	141	1.72	267	1.46	185	0.72	46	1.82	303	0.25	4	0.26	5	1.26	137	1.31	148	1.45	182	1.25	135
14,	1.80	295	1.56	213	1.91	339	0.70	43	1.18	121	0.25	4	0.28	5	1.02	91	1.22	129	1.28	141	1.35	158
15,	2.02	384	1.53	204	2.45	610	0.69	42	0.92	74	0.26	5	0.52	23	4.20	2580	1.18	121	1.21	127	2.00	375
16,	1.55	210	1.42	175	2.24	492	0.65	37	0.78	54	0.20	3	0.49	20	3.10	1110	1.15	115	1.28	141	3.48	1560
17,	1.38	165	1.30	145	1.89	331	0.63	35	0.65	37	0.40	13	0.40	13	1.85	315	1.05	96	1.20	125	2.80	840
18,	2.60	700	1.29	143	1.64	239	0.63	35	0.62	33	0.42	15	0.35	10	1.60	225	2.18	460	2.58	688	2.28	514
19,	2.28	514	1.15	115	1.54	207	0.68	41	0.59	30	0.28	5	0.29	6	1.44	180	1.65	242	2.30	525	1.92	343
20,	2.08	411	1.29	143	3.45	1520	0.70	43	0.52	23	0.20	3	0.28	5	1.28	141	1.51	198	1.92	343	1.68	253
21,	1.85	315	1.36	160	2.62	714	0.63	35	0.42	15	0.45	17	0.26	5	1.12	109	1.38	165	1.80	295	1.54	207
22,	1.72	267	1.26	137	2.45	610	0.60	31	0.36	10	0.41	14	0.25	4	1.38	165	1.34	155	1.60	225	1.58	219
23,	1.44	180	1.34	155	2.55	670	0.56	27	0.35	10	0.35	10	0.19	3	1.05	96	2.16	450	1.37	162	1.84	311
24,	1.26	137	1.24	133	2.33	542	0.72	46	0.38	12	0.41	14	0.36	10	0.92	74	1.72	267	1.38	165	1.55	210
25,	1.36	160	1.14	113	2.04	393	0.58	29	0.58	29	0.39	12	1.17	119	0.86	65	1.62	232	1.32	150	1.46	185
26,	1.37	162	1.14	113	1.76	281	0.52	23	0.68	41	0.29	6	0.88	68	0.85	64	1.50	195	1.22	129	1.60	225
27,	1.54	207	2.72	784	1.58	219	0.44	16	0.68	41	0.22	4	0.69	42	0.80	57	1.46	185	1.15	115	2.35	552
28,	1.36	160	2.52	652	1.44	180	0.40	13	0.50	21	0.18	3	0.64	36	0.82	60	1.32	150	1.15	115	1.94	351
29,	------	------	2.19	465	1.32	150	0.40	13	0.35	10	0.17	2	2.36	558	1.76	281	1.22	129	1.08	101	1.90	335
30,	------	------	1.92	343	1.24	133	0.52	23	0.30	6	0.20	3	1.82	303	1.64	239	1.15	115	1.00	87	1.61	228
31,	------	------	1.69	256	------	------	0.48	19	------	------	0.14	2	2.32	536	------	------	1.12	109	------	------	1.62	232

*Maximum 5.4 at 4 p. m. §4500 sec.-ft.
†Maximum 6.2 at 8 a. m. §6110 sec.-ft.
‡Maximum 10.6 at 8 a. m. §15000 sec.-ft.
§Estimated.

ESTIMATED MONTHLY DISCHARGE OF BALD EAGLE CREEK, AT MILESBURG, CENTRE COUNTY.

(Drainage Area 140 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1911.					
arch,	784	65	204	1.457	1.680
pril,	1520	133	373	2.664	2.972
ay,	182	13	51	0.364	0.420
ne,	306	6	50	0.357	0.398
ly	17	2	6	0.043	0.050
gust,	*4590	2	120	0.857	0.988
ptember,	*6110	49	451	3.221	3.594
ctober,	*15000	96	642	4.586	5.287
ovember,	688	77	188	1.343	1.498
ecember,	1560	81	272	1.943	2.240

Estimated.

SPRING CREEK.

DESCRIPTION OF BASIN.

Spring creek, an important tributary of Bald Eagle creek, drains an area of approximately 145 square miles, rising in the south central part of Centre county, and flowing in a general northerly direction through a rich and thickly inhabited farming section, to its mouth at Milesburg, a distance of about 20 miles, the basin being approximately pear shaped. Its course is winding, the slope being rapid at the headwaters and gradually decreasing as the mouth is reached. There are many small tributaries rising in the well timbered mountains, but throughout a stretch of ten miles of this stream, from above State College to Bellefonte, no surface tributaries enter it. Throughout this section the valley and surrounding hills are underlain with limestone, sink holes being much in evidence, and the drainage of this part of the watershed appears in numerous limestone springs close to the creek banks, the largest of which is Bellefonte Spring at Bellefonte, with a continuous flow of approximately 9,000,000 gallons daily. The dry weather flow of this creek is very large, and plays an important part in maintaining the low-water flow of Bald Eagle creek. In this watershed lie State College, Bellefonte and Centre Hall boroughs, and many large farming villages, nearly all of which towns obtain domestic water supply from the upper tributaries of Spring creek, while the main stream is used at numerous points by small water-power installations.

The watershed lies partly in an area of 35 to 40, and partly in an area of 40 to 45 inches mean annual precipitation.

The discharge of this stream has been measured since February 7, 1911, about one mile below Bellefonte.

SUSQUEHANNA BASIN—STATION NO. 10.

SPRING CREEK AT BELLEFONTE.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania on February 7, 1911, on a through-truss, iron, highway bridge, one mile below Bellefonte.

The channel is straight for 300 feet above the station, but there is a bend to the left 80 feet below. The bed of the creek is of gravel and stones, and is fairly permanent. Both banks are flat and overflow during high water.

Discharge measurements are taken from the downstream side of the highway bridge; the initial point for soundings being the face of the left abutment on the downstream side of the bridge under the guard-rail.

A staff gage is bolted to the downstream face of the left abutment of the highway bridge. The elevation of zero is arbitrary datum. Bench mark No. 1 is a chiseled mark on downstream corner of downstream edge of left abutment, elevation 7.56 ft. above gage datum. The gage is read twice daily by J. H. Oliger.

There is a canal about 300 feet east of the creek proper which carries a very small part of the flow of the stream, most of which is leakage through the head gates. Discharge measurements made from the concrete bridge over the canal indicate that the mean daily discharge is approximately 6 cubic feet per second during the entire year, which has, therefore, been added to the daily discharge.

Since the establishment of this station, 4 discharge measurements have been made of the creek proper and the canal.

DISCHARGE MEASUREMENTS OF SPRING CREEK AT BELLEFONTE, CENTRE COUNTY, PENNA.

(Drainage Area 145 *Square Miles.)*

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
	1911.		Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
1	Mar. 22,	Langenheim,	87	160	1.38	1.84	221	Creek proper.
	do.	do.	25	10.8	.66	0.80	7.1	Canal.
2	July 23,	Langenheim,	87	134	1.16	1.55	155	Creek proper.
	do.	do.	5.8	1.02	.25	0.80	.25	Canal. Canal clogging up with mud.
	1912.							
3	May 22,	Reckord & Boehringer,	86	173	2.05	2.23	354	Creek proper.
	do.	do.	16	8	.90	0.72	7.2	Canal. Clogging up with mud.
4	Oct. 4,	Langenheim,	82	114	1.61	1.56	183	Creek proper.
	do.	do.	4.5	3.95	0.53	1.04	2.1	Canal.

DISCHARGE TABLE FOR SPRING CREEK AT BELLEFONTE, CENTRE COUNTY, FROM FEB. 7, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.00	87	.70	215	.30	405	.90	680	.50	1090
.10	101	.80	240	.40	445	3.00	740	.60	1180
.20	116	.90	270	.50	485	.10	800	.70	1280
.30	132	2.00	300	.60	530	.20	870	.80	1380
.40	150	.10	335	.70	575	.30	940	.90	1480
.50	179	.20	370	.80	625	.40	1010	4.00	1590
.60	192								

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SPRING CREEK AT BELLEFONTE, CENTRE COUNTY, PENNA.

1911.	FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	1.84	258	2.15	358	2.16	362	1.79	244	1.70	221	1.60	198	1.72	226	2.70	581	2.01	310	1.82	252
2,	------	------	1.90	276	2.14	355	2.16	362	1.76	236	1.68	216	1.60	198	1.70	221	a4.30	1920	1.99	303	1.84	258
3,	------	------	1.81	249	2.05	324	2.12	348	1.72	226	1.68	216	1.89	273	1.68	216	3.15	841	1.98	300	1.82	252
4,	------	------	1.80	246	2.00	306	2.04	320	1.70	221	1.70	221	2.00	306	1.64	207	2.86	664	2.01	310	1.76	236
5,	------	------	1.78	241	2.36	435	2.02	313	2.38	443	1.68	216	1.70	221	1.69	219	2.70	581	1.92	282	1.76	236
6,	------	------	1.90	276	2.20	376	2.00	306	1.84	258	1.68	216	1.57	191	1.76	236	2.51	496	1.98	300	1.79	244
7,	1.70	221	1.88	270	2.52	500	2.00	306	1.79	244	1.68	216	1.75	234	1.64	207	3.10	806	2.10	341	1.82	252
8,	1.70	221	1.78	241	2.28	404	1.96	294	1.78	241	1.68	216	1.60	198	1.66	212	2.62	545	1.95	291	1.80	246
9,	1.72	226	1.76	236	2.20	376	1.95	291	1.75	234	1.64	207	1.60	198	2.90	686	2.54	509	1.90	276	1.81	249
10	1.72	226	1.94	288	2.20	376	1.95	291	1.76	236	1.60	198	1.60	198	2.30	411	2.50	491	1.92	282	1.85	261
11,	1.70	221	1.82	252	2.12	348	1.95	291	1.76	236	1.60	198	1.60	198	2.09	338	2.38	443	1.90	276	1.98	300
12,	1.71	224	1.84	258	2.10	341	1.89	273	2.99	740	1.60	198	1.59	196	1.98	300	2.30	411	1.92	282	1.74	231
13,	1.75	234	1.88	270	2.40	451	1.89	273	2.35	431	1.64	207	1.52	180	1.88	270	2.28	404	1.98	300	1.83	255
14,	2.15	358	1.84	258	2.49	487	1.89	273	2.18	369	1.62	203	1.56	189	1.85	261	2.20	376	1.94	288	1.78	241
15,	1.98	300	1.86	264	2.20	376	1.86	264	2.08	334	1.64	207	1.62	203	2.50	491	2.24	390	1.94	288	1.91	279
16,	1.45	166	1.78	241	2.14	355	1.82	252	2.02	313	1.60	198	1.60	198	2.28	404	2.15	358	1.93	285	2.16	362
17,	1.90	276	1.85	261	2.20	376	1.85	261	1.96	294	1.66	212	1.58	194	2.15	358	2.00	306	1.94	288	2.18	369
18,	1.92	282	1.85	261	2.16	362	1.78	241	1.90	276	1.68	216	1.55	187	2.34	427	2.32	419	2.00	306	2.30	411
19,	2.08	334	1.81	249	2.19	372	3.40	1020	1.89	273	1.64	207	1.56	189	2.04	320	2.20	376	2.00	306	2.19	372
20,	2.10	341	1.81	249	2.52	500	2.20	376	1.88	270	1.62	203	1.52	180	1.96	294	2.05	324	2.45	471	2.32	419
21,	1.90	276	1.83	255	2.43	463	2.08	334	1.80	246	1.70	221	1.51	178	1.91	279	2.15	358	2.06	327	2.50	491
22,	1.95	291	1.85	261	2.54	509	2.02	313	1.80	246	1.65	210	1.52	180	1.92	282	2.00	306	2.02	313	2.40	451
23,	1.90	276	1.81	249	2.52	500	1.96	294	1.82	252	1.60	198	1.59	196	1.86	264	2.15	358	1.96	294	2.15	358
24,	1.92	282	1.75	234	2.50	491	1.92	282	1.81	249	1.61	200	1.71	224	1.85	261	2.20	376	1.95	291	2.08	334
25,	1.85	261	1.84	258	2.46	475	1.88	270	1.80	246	1.62	203	1.64	207	1.80	246	2.20	376	1.92	282	2.02	313
26,	1.90	276	1.74	231	2.28	404	1.86	264	1.80	246	1.61	200	1.60	198	1.79	244	2.21	380	1.90	276	2.08	334
27	1.88	270	2.40	451	2.28	404	1.86	264	1.81	249	1.58	194	1.50	176	1.79	244	2.20	376	1.88	270	2.20	376
28,	1.84	258	2.52	500	2.22	383	1.86	264	1.76	236	1.58	194	1.55	187	1.80	246	2.20	376	1.86	264	2.12	348
29,	------	------	2.49	487	2.19	372	1.90	276	1.73	228	1.57	191	1.90	276	1.90	276	2.14	355	1.90	276	2.08	334
30,	------	------	2.36	435	2.16	362	1.89	273	1.70	221	1.54	185	1.78	241	1.88	270	2.08	334	1.86	264	2.12	348
31,	------	------	2.33	423	------	------	1.75	234	------	------	1.57	191	1.85	261	------	------	2.06	327	------	------	2.14	355

Note—6 sec.-ft. added to daily discharge for canal. a Maximum 5.0 feet at 6 A. M.=2830 sec.-ft.

ESTIMATED MONTHLY DISCHARGE OF SPRING CREEK, AT BELLEFONTE, CENTRE COUNTY.

(Drainage Area 145 Square Miles).

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1911.					
March,	500	231	288	1.986	2.290
April,	509	306	405	2.793	3.116
May,	1020	234	316	2.179	2.512
June,	740	221	285	1.966	2.194
July,	221	185	206	1.421	1.638
August,	306	176	208	1.434	1.653
September,	686	207	297	2.048	2.285
October,	2830	306	489	3.372	3.887
November	471	264	298	2.055	2.292
December,	491	231	315	2.172	2.504

SUSQUEHANNA BASIN—STATION NO. 11.

BALD EAGLE CREEK AT BEECH CREEK STATION.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania, on June 23, 1910, at the three span, pony-truss, highway bridge, immediately above the Beech Creek Station, on the Pennsylvania Railroad.

The channel is straight for 450 feet above the station, with Beech Creek entering at right angles from the west immediately above the bridge, while the channel below the station is straight for 600 feet. The direction of the current is straight under the lower side of the bridge. The right bank is 35 feet above the bed of the creek, while on the left there are flats 8 to 10 feet above the bed. The bed of the creek is of rock, gravel and mud.

Discharge measurements are taken from the downstream side of the bridge; the initial point for soundings being the end of the wooden guard-rail on the downstream side at the east end of the bridge.

A standard chain gage is fastened to the guard-rail in the fifth panel from the east end of the upstream side of the bridge. The length of chain from bottom of weight to center of marker is 35.37 feet. The elevation of zero is arbitrary datum. Bench Mark No. 1 is chiseled on the outer downstream corner of the right bridge seat, elevation 9.085 ft. above zero of gage. The gage is read twice daily by S. C. Mains, Station Agent.

Since the establishment of this station, 4 discharge measurements have been made. Owing to the insufficient number of discharge measurements, no rating curve has been computed for this station, and only the discharge measurements and daily gage heights have been published.

DISCHARGE MEASUREMENTS OF BALD EAGLE CREEK, AT BEECH CREEK, CLINTON COUNTY, PA.

(Drainage Area 565 Square Miles).

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
1	1910. July 14,	Ryder,	154	419	0.87	1.70	365	Wading in west channel.
2	Dec. 1,	Langenheim,	178	571	0.60	2.58	341	Surface msmt.
3	1911. Sept. 13,	Reckord,	191	684	1.47	3.06	1003	Surface msmt.
4	1912. May 22,	Reckord & Boehringer,	194	669	1.85	3.05	1238	0.6 msmt.

DAILY MEAN GAGE HEIGHTS OF BALD EAGLE CREEK, AT BEECH CREEK, CLINTON COUNTY, PA.

1910. Day.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
	G H	G H	G H	G H	G H	G H	G H
1,		1.83	1.52	1.91	2.49	2.43	2.58
2,		1.80	1.52	1.94	2.36	2.43	2.50
3,		1.77	1.50	2.19	2.33	2.41	2.45
4,		1.79	1.48	2.53	2.34	2.40	2.36
5,		1.75	1.46	2.51	2.27	2.36	2.34
6,		1.70	1.47	2.37	2.26	2.37	2.32
7,		1.69	1.47	2.19	2.25	2.09	2.28
8,		1.79	1.48	2.19	2.18	2.12	2.34
9,		1.75	1.52	2.29	2.14	2.09	2.30
10,		1.66	1.68	2.17	2.12	2.11	2.14
11,		1.63	1.68	2.13	2.10	2.13	2.22
12,		1.63	1.67	2.09	2.06	2.09	2.23
13		2.67	1.56	2.11	2.19	2.12	2.20
14.		1.83	1.57	2.13	2.10	2.15	2.18
15,		1.69	1.64	2.05	2.17	2.17	2.26
16,		1.69	1.77	2.03	2.18	2.13	2.15
17,		2.15	1.87	1.97	2.19	2.13	1.92
18,		2.05	1.91	1.94	2.24	2.17	1.94
19,		1.75	1.96	1.89	2.14	2.10	2.05
20,		1.68	1.94	1.91	2.19	2.04	2.10
21,		1.64	1.91	1.91	2.19	1.98	2.06
22,		1.62	1.88	1.89	2.48	2.13	2.05
23,		1.59	1.88	1.91	2.66	2.07	2.10
24,	2.07	1.62	1.86	1.97	2.46	2.04	2.08
25.	1.99	1.61	1.82	2.12	2.38	2.13	1.90
26,	1.96	1.59	1.80	2.47	2.48	2.23	1.90
27	1.94	1.59	1.78	2.60	2.46	2.19	2.20
28.	2.00	1.89	1.78	2.85	2.50	2.27	2.16
29,	1.95	1.68	1.80	2.75	2.50	2.67	2.17
30,	1.86	1.61	1.85	2.61	2.50	2.67	2.46
31,		1.55	1.89		2.54		3.11

DAILY MEAN GAGE HEIGHTS OF BALD EAGLE CREEK, AT BEECH CREEK, CLINTON COUNTY, PA.

1911. Day.	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H
1,	3.17	2.79	2.68	2.96	2.70	1.92	1.70	1.60	3.20	3.30	2.79	2.63
2,	3.26	2.69	2.66	2.82	2.75	1.86	1.68	1.55	2.85	f10.16	2.72	2.62
3,	3.38	2.52	2.58	2.72	2.52	1.82	1.65	2.14	2.78	5.54	2.65	2.62
4,	3.28	2.56	2.51	2.68	2.46	1.85	1.64	2.40	2.65	4.40	2.61	2.58
5,	3.42	2.50	2.36	3.03	2.36	2.08	1.62	2.63	2.58	3.78	2.60	2.54
6,	3.71	2.38	2.60	3.50	2.31	2.12	1.60	2.04	3.44	3.48	2.66	2.49
7,	3.25	2.44	2.26	3.36	2.26	1.92	1.60	1.90	3.08	5.14	3.28	2.48
8,	3.16	2.46	2.26	3.30	2.21	1.88	1.60	1.80	3.38	4.28	2.94	2.48
9,	2.93	2.36	2.19	3.32	2.22	1.81	1.62	1.77	e7.10	3.80	2.84	2.61
10,	2.80	2.32	2.49	3.30	2.18	1.81	1.64	1.72	4.91	3.55	2.79	2.67
11,	2.74	2.12	2.75	3.12	2.26	1.81	1.66	1.68	3.78	3.48	2.79	2.64
12	2.98	2.09	2.68	3.02	2.16	2.88	1.62	1.68	3.30	3.26	2.82	2.64
13,	3.78	2.24	2.68	2.92	2.09	3.20	1.59	1.65	3.04	3.12	3.02	2.72
14,	5.38	2.54	2.64	3.12	2.06	2.56	1.60	1.64	2.89	2.98	2.79	2.68
15,	a6.74	3.18	2.69	3.72	2.04	2.38	1.60	1.64	4.95	2.94	2.82	3.31
16,	4.72	2.70	2.52	3.54	2.04	2.24	1.64	2.35	4.92	2.92	2.80	4.52
17,	4.36	2.58	2.55	3.36	2.06	2.14	1.72	2.05	3.90	2.81	2.90	4.40
18,	3.37	3.62	2.50	3.16	2.06	2.09	1.65	2.44	3.54	3.46	2.90	3.98
19,	3.12	3.60	2.42	3.02	2.04	2.03	1.59	2.23	3.30	3.14	2.85	3.62
20,	2.94	3.30	2.49	c4.72	2.32	1.96	1.60	2.12	3.13	3.03	2.91	3.36
21,	2.85	3.00	2.58	4.35	2.14	1.90	1.70	2.03	2.97	2.98	2.91	3.22
22,	2.72	2.85	2.50	4.32	2.06	1.86	1.72	1.96	3.02	3.32	2.89	3.16
23,	2.59	2.72	2.49	4.15	2.06	1.86	1.65	1.92	2.93	3.50	2.79	3.33
24,	2.45	2.59	2.48	3.82	2.07	1.85	1.69	2.12	2.72	3.22	2.90	3.14
25,	2.41	2.63	2.43	3.55	2.00	1.88	1.74	3.00	2.64	3.14	2.87	3.06
26,	2.45	2.68	2.40	3.35	1.96	1.90	1.66	2.86	2.78	3.09	2.83	3.08
27,	2.46	2.78	3.52	3.14	1.92	2.00	1.64	2.51	2.68	3.02	2.76	3.58
28,	3.88	2.72	b4.04	2.94	1.88	1.84	1.62	2.54	2.70	2.99	2.76	3.45
29,	3.20	------	3.62	2.84	1.88	1.74	1.62	d4.10	3.18	2.92	2.73	3.30
30,	3.24	------	3.50	2.76	2.00	1.74	1.64	3.55	3.56	2.82	2.59	3.22
31,	2.80	------	3.25	------	1.90	------	1.62	3.48	------	2.82	------	3.14

a Maximum 7.20 feet at 7.45 A. M.
b Maximum 4.2 feet at 7.00 A. M.
c Maximum 4.9 feet at 5.00 P. M.
d Maximum 4.65 feet at 5.00 P. M.
e Maximum 8.5 feet at 5.00 P. M.
f Maximum 10.9 feet at —— A. M.

PINE CREEK.

DESCRIPTION OF BASIN.

Pine creek, one of the major tributaries of the West Branch of the Susquehanna river, drains an area of approximately 975 square miles in Potter, Tioga and Lycoming counties. Rising in the northeastern part of Potter county, on the divide of the Allegheny, Genesee and Susquehanna river basins, it flows in a general southeasterly direction to its mouth at Jersey Shore, Lycoming county, a distance of approximately 75 miles.

The headwaters are steep and rapid, flowing through narrow valleys to Galeton, Potter county, from which point the creek continues in a broader valley and with less fall, passing through extensive marshy areas in Tioga county, where it turns southward through a deep, narrow valley, with considerable fall, walled in on either side by high table land, through which it has cut a channel with steep precipitous sides, nearly to its mouth, where the valley again broadens out. This stream has many tributaries, the most important being West Branch, Marsh run, Babb creek and Little Pine creek. Practically the entire watershed is well covered with second growth timber, there being proportionately little cultivated land. The headwaters of Pine creek lie within the glacial area. There are numerous small villages on its basin, and a few boroughs of considerable size, some of which obtain their water supply therefrom.

The upper part of the watershed is subject to a mean annual precipitation of 35 to 40 inches, while the lower part lies in an area of from 40 to 45 inches.

The discharge has been measured since July 15, 1908, at Waterville, 13½ miles above the mouth.

SUSQUEHANNA BASIN STATION—No. 12.

PINE CREEK AT WATERVILLE.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania on July 15, 1908, at a single span, through-truss highway bridge three-fourths of a mile above the railroad station at Waterville.

The channel is straight for 1,000 feet above the station, and for 500 feet below; there is a riffle 1,000 feet above and one 300 feet below the station. The right bank overflows in extreme stages, such as the flood of 1865 and 1889, while the left bank is high and does not overflow. The bed of the creek is of gravel and is permanent.

Discharge measurements are taken from the downstream side of the bridge, the initial point for soundings being the right end of the downstream handrail.

A standard chain gage is attached to the downstream handrail of the bridge. The length of chain from bottom of weight to center of marker is 29.72 ft. The elevation of zero is arbitrary datum. Bench mark No. 1 is a projection on stone 2.7 ft. in from face of right abutment, downstream side or wing, lowest stone; dog mark on stone, elevation 7.088 feet above zero of gage; Bench mark No. 2 is a projection on stone 8.8 feet in from face of right abutment, downstream side, fourth stone in from face of abutment, fourth stone up from ground. The gage is read twice daily by Howard Harris.

Since the establishment of this station, 29 discharge measurements have been taken.

DISCHARGE MEASUREMENTS OF PINE CREEK, AT WATERVILLE, LYCOMING COUNTY, PENNA.

(Drainage Area 750 Square Miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1908.							
1	July 15,	Grant,	195	211	0.89	1.14	188	
2	Aug. 12,	do.	194	216	0.80	1.07	173	
3	Oct. 21,	do.	48	74	0.91	0.79	67	Wading msmt. below bridge.
	1909.							
4	Feb. 25,	Langenheim,	270	1613	5.33	6.80	8593	
5	May 2,	Reckord,	-----	-----	-----	9.80	-----	Float measurement.
6	May 2,	do.	-----	-----	-----	9.00	-----	do.
7	May 2,	do.	-----	-----	-----	8.50	-----	do.
8	Aug. 11,	Grant,	48	68	0.68	0.73	46.3	Wading msmt. below bridge.
	1910.							
9	Jan. 23,	Reckord,	243	999	4.18	4.55	4180	
10	Jan. 23,	do.	243	951	4.03	4.32	3834	
11	Jan. 24,	do.	240	807	3.64	3.80	2950	
12	Jan. 25,	do.	236	658	2.95	3.10	1940	
13	Mar. 1,	Ryder,	-----	-----	-----	8.22	12437	
14	Mar. 2,	do.	269	1889	6.73	7.82	12721	
15	Mar. 2,	do.	269	1834	6.65	7.59	12206	
16	Mar. 3,	do.	269	1834	6.57	7.65	12068	
17	Mar. 3,	do.	269	1788	6.39	7.37	11433	
18	Mar. 4,	do.	269	1509	5.81	6.46	8769	
19	Mar. 4,	do.	269	1427	5.64	6.17	8050	
20	Mar. 4,	do.	269	1407	5.55	6.05	7815	
21	Mar. 5,	do.	269	1321	5.37	5.75	7108	
22	Mar. 5.	do.	269	1267	5.26	5.54	6660	
23	April 26,	do.	269	2614	8.40	10.56	21940	
24	April 26,	do.	270	2511	8.05	10.13	20209	
25	June 20,	Langenheim,	215	395	2.16	2.08	854	
26	July 15,	Ryder,	198	188	1.00	1.11	183	
27	Nov. 30,	Langenheim,	210	240	1.45	1.40	348	
	1911.							
28	Mar. 23,	Langenheim,	241	602	3.18	3.00	1917	
	1912.							
29	May 23,	Reckord & Boehringer,	229	513	2.66	2.60	1367	Vertical velocity measurement.

DISCHARGE TABLE FOR PINE CREEK, AT WATERVILLE, LYCOMING COUNTY, FROM JULY 16, 1908.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.60	25	.10	1960	.50	6410	.90	13000	.30	21120
.70	40	.20	2090	.60	6660	8.00	13300	.40	21490
.80	60	.30	2220	.70	6910	.10	13600	.50	21870
.90	95	.40	2355	.80	7165	.20	13900	.60	22260
1.00	130	.50	2500	.90	7420	.30	14200	.70	22650
.10	175	.60	2645	6.00	7675	.40	14510	.80	23045
.20	225	.70	2790	.10	7930	.50	14830	.90	23445
.30	280	.80	2935	.20	8185	.60	15160	11.00	23850
.40	335	.90	3090	.30	8440	.70	15490	.10	24250
.50	400	4.00	3250	.40	8700	.80	15820	.20	24650
.60	465	.10	3410	.50	8965	.90	16150	.30	25050
.70	535	.20	3575	.60	9230	9.00	16490	.40	25450
.80	610	.30	3750	.70	9500	.10	16830	.50	25850
.90	695	.40	3940	.80	9775	.20	17170	.60	26260
2.00	780	.50	4130	.90	10050	.30	17515	.70	26670
.10	870	.60	4320	7.00	10325	.40	17860	.80	27080
.20	965	.70	4520	.10	10610	.50	18210	.90	27490
.30	1065	.80	4740	.20	10905	.60	18570	12.00	27900
.40	1165	.90	4970	.30	11200	.70	18930	.10	28320
.50	1265	5.00	5200	.40	11500	.80	19290	.20	28740
.60	1370	.10	5430	.50	11800	.90	19650	.30	29160
.70	1480	.20	5670	.60	12100	10.00	20010	.40	29580
.80	1595	.30	5910	.70	12400	.10	20380	.50	30000
.90	1715	.40	6160	.80	12700	.20	20750		
3.00	1835								

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF PINE CREEK, AT WATERVILLE, LYCOMING COUNTY, PENNA.

1908.	JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	1.1	175	0.8	60	1.1	175	1.0	130	0.8	60
2,	------	------	1.0	130	0.8	60	0.9	95	1.0	130	0.8	60
3,	------	------	1.0	130	0.8	60	0.9	95	0.9	95	0.9	95
4,	------	------	1.0	130	0.8	60	0.9	95	0.9	95	0.9	95
5,	------	------	1.1	175	0.75	50	0.9	95	0.8	60	0.9	95
6,	------	------	1.4	335	0.7	40	0.9	95	0.8	60	0.9	95
7,	------	------	1.3	280	0.75	50	0.9	95	0.8	60	1.0	130
8,	------	------	1.3	280	0.8	60	0.9	95	0.8	60	1.1	175
9,	------	------	1.3	280	0.8	60	0.8	60	0.8	60	1.3	280
10,	------	------	1.2	225	0.7	40	0.8	60	0.9	95	1.4	335
11,	------	------	1.1	175	0.7	40	0.9	95	0.9	95	1.4	335
12,	------	------	1.1	175	0.7	40	0.9	95	0.9	95	1.4	335
13,	------	------	1.1	175	0.7	40	0.9	95	0.9	95	1.3	280
14,	------	------	0.9	95	0.7	40	0.9	95	0.9	95	1.3	280
15,	------	------	1.25	255	0.7	40	0.8	60	0.9	95	1.3	280
16,	1.0	130	1.0	130	0.7	40	0.8	60	0.9	95	1.2	225
17,	1.0	130	1.05	150	0.7	40	0.8	60	0.9	95	1.1	175
18,	1.0	130	1.7	535	0.7	40	0.8	60	0.9	95	1.4	335
19,	1.0	130	1.35	310	0.6	25	0.8	60	0.8	60	1.4	335
20,	1.0	130	1.3	280	0.6	25	0.8	60	0.8	60	1.5	400
21,	1.0	130	1.15	200	0.6	25	0.8	60	0.8	60	1.5	400
22,	1.9	695	1.05	150	0.6	25	0.8	60	0.8	60	1.5	400
23,	1.65	500	1.0	130	0.6	25	0.8	60	0.8	60	1.4	335
24,	1.3	280	1.1	175	0.6	25	0.8	60	0.8	60	1.3	280
25,	2.15	920	1.1	175	0.6	25	0.9	95	0.9	95	1.3	280
26,	2.45	1215	1.0	130	0.6	25	1.4	335	0.9	95	1.3	280
27,	1.65	500	1.0	130	0.6	25	1.4	335	0.9	95	1.3	280
28,	1.35	310	1.0	130	0.7	40	1.5	400	0.8	60	1.4	335
29,	1.3	280	1.0	130	0.9	95	1.2	225	0.8	60	1.5	400
30,	1.2	225	0.9	95	1.3	280	1.0	130	0.8	60	1.5	400
31,	1.1	175	0.9	95	------	------	0.9	95	------	------	1.4	335

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF PINE CREEK, AT WATERVILLE, LYCOMING COUNTY, PENNA.

1909.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.4	335	1.95	740	3.05	1900	2.6	1370	†10.85	23245	1.6	465	1.6	465	0.87	84	0.7	40	1.2	225	0.9	95	0.7	40
2,	1.4	335	2.0	780	2.95	1775	2.6	1370	9.68	18860	1.6	465	1.5	400	0.87	84	0.7	40	1.2	225	0.9	95	0.7	40
3	1.5	400	2.0	780	2.75	1540	2.6	1370	7.0	10325	1.6	465	1.4	335	0.87	84	0.7	40	1.2	225	0.9	95	0.7	40
4,	1.9	695	2.0	780	2.35	1115	2.6	1370	5.3	5910	1.9	695	1.4	335	0.87	84	0.7	40	1.2	225	0.9	95	0.8	60
5,	2.9	1715	2.05	825	2.10	870	2.5	1265	4.5	4130	2.25	1015	1.3	280	0.77	54	0.7	40	1.15	200	0.9	95	0.8	60
6,	4.4	3940	3.9	3090	2.15	920	3.15	2025	3.65	2720	2.5	1265	1.2	225	0.77	54	0.6	25	1.1	175	0.8	60	0.8	60
7,	2.9	1715	4.35	3845	2.35	1115	3.9	3090	3.05	1900	2.6	1370	1.2	225	0.77	54	0.6	25	1.1	175	0.8	60	0.8	60
8,	2.7	1480	3.45	2430	2.2	965	3.4	2355	3.0	1835	2.6	1370	1.2	225	0.77	54	0.6	25	1.1	175	0.8	60	0.8	60
9,	2.5	1265	3.75	2860	2.25	1015	3.4	2355	2.95	1775	2.4	1165	1.1	175	0.77	54	0.6	25	1.1	175	0.8	60	0.9	95
10,	2.0	780	3.15	2025	2.65	1425	3.1	1960	2.8	1590	2.5	1265	1.1	175	0.77	54	0.8	60	1.1	175	0.8	60	1.0	130
11,	2.1	870	2.9	1715	2.8	1595	2.9	1715	2.8	1590	2.4	1165	1.1	175	0.73	46	0.8	60	1.1	175	0.8	60	1.0	130
12,	2.4	1165	2.9	1715	2.55	1320	2.8	1595	2.3	1065	2.3	1065	1.0	130	0.70	40	0.8	60	1.45	370	0.8	60	1.0	130
13,	2.4	1165	2.8	1595	2.5	1265	2.6	1370	2.5	1265	2.3	1065	1.1	175	0.70	40	0.8	60	1.5	400	0.7	40	1.0	130
14,	3.8	2935	2.8	1595	3.25	2155	5.45	6285	2.3	1065	3.75	2860	1.1	175	0.70	40	0.9	95	1.4	335	0.7	40	1.65	500
15,	3.7	2790	3.65	2720	2.7	1480	6.0	7675	2.0	780	3.35	2290	1.0	130	0.70	40	1.25	250	1.1	175	0.7	40	2.25	1015
16,	3.7	2790	4.25	3660	2.45	1215	4.75	4630	2.0	780	2.9	1715	1.1	175	0.7	40	1.3	280	0.85	78	0.7	40	1.5	400
17,	3.5	2500	3.75	2860	2.4	1165	3.9	3090	2.0	780	2.7	1480	1.25	250	0.9	95	1.3	280	0.8	60	0.7	40	1.42	348
18	3.5	2500	3.35	2290	2.2	965	3.15	2025	2.0	780	2.5	1265	1.07	162	0.9	95	1.3	280	0.8	60	0.7	40	1.3	280
19,	3.4	2355	3.35	2290	2.2	965	3.0	1835	2.0	780	2.5	1265	1.05	153	0.9	95	1.2	225	0.8	60	0.7	40	1.5	400
20,	3.3	2220	4.15	3490	1.9	695	2.8	1595	1.9	695	2.2	965	0.87	84	0.8	60	1.2	225	0.9	95	0.7	40	1.8	610
21,	3.4	2355	4.2	3575	2.0	780	2.9	1715	1.9	695	1.9	695	0.87	84	0.8	60	1.2	225	1.15	200	0.7	40	1.75	570
22,	3.4	2355	3.95	3170	2.0	780	3.1	1960	1.9	695	2.0	780	0.87	84	0.8	60	1.3	280	1.45	370	0.7	40	1.5	400
23,	3.5	2500	3.6	2645	1.95	740	3.0	1835	1.8	610	1.9	695	1.07	162	0.7	40	1.55	430	1.5	400	0.75	50	1.5	400
24,	*6.05	7800	6.4	8700	1.9	695	3.35	2290	1.6	465	1.7	535	1.27	264	0.7	40	1.7	535	1.25	250	0.8	60	1.4	335
25,	7.6	12100	6.45	8830	2.15	920	2.55	1320	1.5	400	1.7	535	1.17	210	0.7	40	1.75	570	1.2	225	0.8	60	1.4	335
26,	5.3	5910	5.5	6410	3.05	1900	2.6	1370	1.6	465	1.6	465	1.07	162	0.7	40	1.85	650	1.15	200	0.8	60	1.4	335
27,	4.2	3575	4.5	4130	2.9	1715	2.5	1265	1.6	465	1.4	335	0.87	84	0.7	40	1.6	465	1.1	175	0.8	60	1.4	335
28,	3.4	2355	3.45	2430	2.85	1655	2.45	1215	1.8	610	1.45	370	0.87	84	0.7	40	1.45	370	1.1	175	0.8	60	1.4	335
29,	3.1	1960	------	------	2.8	1595	2.8	1595	2.0	780	1.8	610	0.87	84	0.7	40	1.35	310	1.0	130	0.8	60	1.5	400
30,	2.6	1370	------	------	2.6	1370	7.3	11200	1.8	610	1.5	400	0.87	84	0.7	40	1.3	280	0.9	95	0.8	60	1.5	400
31,	2.45	1215	------	------	2.7	1480	------	------	1.65	500	------	------	0.87	84	0.7	40	------	------	0.9	95	------	------	1.5	400

* Maximum 8.3 feet at 6.30 P. M.=14,200 sec.-ft.
† Maximum 11.6 feet at 3.30 P. M.=26,260 sec.-ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF PINE CREEK AT WATERVILLE, LYCOMING COUNTY, PENNA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.50	400	1.82	625	‖8.10	13600	2.41	1175	3.28	2195	2.14	910	1.26	260	0.82	65	0.75	50	1.10	175	.85	80	1.35	310
2,	1.50	400	1.70	535	7.80	12700	2.26	1025	3.46	2440	2.04	815	1.26	260	0.78	55	0.75	50	1.00	130	.85	80	1.28	270
3,	1.50	400	1.80	610	7.50	11800	2.14	910	3.41	2370	2.01	790	1.25	250	0.78	55	0.98	125	.98	125	.85	80	1.10	175
4,	1.50	400	1.70	535	6.38	8650	2.06	835	3.61	2660	1.86	660	1.22	235	0.80	60	1.20	225	.95	115	.85	80	1.22	235
5,	1.65	500	1.65	500	5.52	6460	2.06	835	3.28	2195	1.81	620	1.16	205	0.78	55	1.30	280	.90	95	.90	95	1.32	290
6,	1.80	610	1.50	400	5.58	6610	1.96	745	3.08	1935	1.81	620	1.14	195	0.76	50	1.12	185	.90	95	.90	95	1.42	350
7,	1.85	650	1.90	695	7.02	10380	1.94	730	2.91	1725	1.81	620	1.11	180	0.60	25	1.12	185	.90	95	.85	80	1.30	280
8,	1.90	695	2.50	1265	5.90	7420	1.84	645	2.71	1490	1.78	595	1.06	155	0.65	35	0.98	125	.82	65	.85	80	1.35	310
9,	1.90	695	2.65	1425	4.75	4630	1.78	595	2.64	1415	1.78	595	1.11	180	0.80	60	0.95	115	.90	95	.85	80	1.45	370
10,	1.90	695	2.42	1185	3.92	3120	1.68	520	2.48	1245	1.81	620	1.08	165	0.85	80	0.90	95	.90	95	.90	95	1.52	415
11,	1.90	695	2.30	1065	3.55	2575	1.66	505	2.31	1075	2.18	945	1.10	175	1.00	130	0.85	80	.82	65	.88	90	1.50	400
12,	1.90	695	2.45	1215	3.38	2330	1.61	470	2.16	925	2.48	1245	1.18	215	0.90	95	0.85	80	.82	65	.90	95	1.45	370
13,	1.90	695	2.45	1215	3.25	2155	1.54	425	2.04	815	2.41	1175	1.30	280	0.90	95	0.85	80	.80	60	1.00	130	1.30	280
14,	1.90	695	2.50	1265	3.08	1935	1.48	385	1.94	730	2.48	1045	1.28	270	0.85	80	0.85	80	.80	60	.98	125	1.38	325
15,	1.90	695	2.50	1265	2.75	1540	1.46	375	1.84	645	2.04	815	1.10	175	0.75	50	0.80	60	.80	60	1.00	130	1.48	385
16,	1.90	695	2.50	1265	2.68	1460	1.54	425	1.81	620	2.18	945	1.22	235	0.75	50	0.78	55	.80	60	1.00	130	1.48	385
17,	1.90	695	2.65	1425	2.60	1370	1.61	470	1.71	540	2.44	1205	1.46	375	0.75	50	0.75	50	.80	60	1.00	130	1.48	385
18,	1.95	740	3.30	2220	2.48	1245	1.91	705	1.68	520	2.46	1225	1.20	225	0.78	55	0.75	50	.80	60	1.00	130	1.48	385
19,	2.20	965	3.10	1960	2.52	1285	2.58	1350	1.66	505	2.26	1025	1.12	185	0.80	60	0.75	50	.75	50	1.00	130	1.50	400
20,	2.50	1265	3.00	1835	2.78	1570	2.86	1665	1.64	495	2.08	850	1.02	140	0.95	115	0.75	50	.80	60	1.00	130	1.60	465
21,	*3.80	2935	3.10	1960	3.48	2470	3.11	1975	1.78	595	1.94	730	1.00	130	0.98	125	0.75	50	.75	50	1.00	130	1.65	500
22,	†5.85	7295	3.60	2645	3.65	2720	3.16	2040	1.81	620	1.84	645	0.99	125	0.80	60	0.75	50	.80	60	.95	115	1.65	500
23,	4.43	3990	3.70	2790	3.70	2790	3.06	1910	1.66	505	1.68	520	0.95	115	0.80	60	0.75	50	.85	80	.95	115	1.60	465
24,	3.65	2725	3.50	2500	3.82	2965	5.71	6935	1.76	580	1.61	470	0.91	100	0.75	50	0.80	60	.82	65	.95	115	1.60	465
25,	3.10	1960	3.30	2220	3.98	3220	10.66	22495	3.14	2010	1.54	425	0.90	95	0.80	60	0.90	95	.88	90	1.00	130	1.68	520
26,	2.70	1480	3.25	2155	4.08	3380	§11.06	24090	3.56	2585	1.44	360	0.90	95	0.80	60	1.05	150	.90	95	1.10	175	1.65	500
27,	2.55	1320	3.70	2790	3.60	2645	7.26	11080	3.04	1885	1.48	385	0.91	100	0.75	50	1.28	270	.90	95	1.18	215	1.60	465
28,	2.32	1085	‡7.75	12550	3.22	2115	5.21	5695	2.74	1525	1.44	360	0.92	100	0.75	50	1.40	335	.95	115	1.20	225	1.90	695
29,	2.15	920	------	------	2.95	1775	4.18	3540	2.48	1245	1.31	285	0.88	90	0.75	50	1.45	370	.92	100	1.30	280	1.90	695
30,	2.00	780	------	------	2.68	1460	3.86	3030	2.36	1125	1.26	260	0.89	90	0.75	50	1.22	235	.85	80	1.38	325	1.95	740
31	1.95	740	------	------	2.62	1390	------	------	2.24	1005	------	------	0.84	75	0.75	50	------	------	.85	80	------	------	4.00	3250

* Ice broke.
† Maximum 6.00 at 4.25 P. M.=7675 sec.-ft.
‡ Haximum 8.10 at 4.25 P. M.=13600 sec.-ft.
‖ Maximum 8.50 at 7.20 A. M.=14830 sec.-ft.
§ Maximum 12.16 at 5.50 A. M.=28570 sec.-ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF PINE CREEK, AT WATERVILLE, LYCOMING COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.23	1800	2.93	1751	2.53	1296	2.89	1703	2.35	1115	2.56	1328	1.14	195	0.81	64	1.77	588	2.77	1560	1.93	720	2.12	889
2,	6.23	1800	2.58	1349	2.36	1125	2.67	1447	2.49	1255	1.84	644	1.06	157	0.81	64	1.55	432	3.50	2500	1.75	572	2.14	908
3,	6.48	1800	2.38	1145	2.16	927	2.42	1185	2.42	1185	1.76	580	1.06	157	0.94	109	1.63	486	3.23	2129	1.73	558	2.09	861
4,	6.73	1800	2.20	965	2.00	780	2.32	1085	2.22	985	1.74	565	1.06	157	1.04	148	1.43	354	3.00	1835	1.65	500	2.04	816
5,	8.23	1800	2.06	834	1.90	695	2.29	1055	2.12	889	1.64	493	1.08	166	1.06	157	1.35	308	2.87	1679	1.63	486	1.99	772
6,	7.46	1800	1.93	720	1.83	635	3.29	2207	2.03	807	1.71	542	1.06	157	1.01	134	1.57	446	2.60	1370	1.65	500	1.89	686
7,	7.46	1800	1.80	610	1.60	465	4.29	3732	1.97	754	1.86	661	1.08	166	0.96	116	1.95	738	3.00	1835	1.93	720	1.84	644
8,	6.88	1800	1.90	695	1.73	558	4.37	3883	1.92	712	1.76	580	1.11	180	0.94	109	1.73	558	2.87	1679	2.13	898	1.84	644
9,	6.48	1800	2.00	780	1.66	507	3.95	3170	1.87	670	1.66	507	1.04	148	1.31	286	3.35	2288	2.75	1538	2.05	825	1.79	602
10,	6.23	1800	1.90	695	1.88	678	3.75	2862	1.82	627	1.56	439	0.98	123	1.11	180	4.75	4630	2.63	1403	2.05	825	1.89	686
11,	6.33	1800	1.78	595	2.06	834	3.49	2486	1.82	627	1.48	387	0.98	123	0.96	116	3.85	3012	2.57	1338	2.05	825	2.09	861
12,	6.28	1800	1.88	678	2.46	1225	3.29	2207	1.82	627	2.14	908	0.96	116	0.88	88	3.13	1999	2.53	1296	2.10	870	2.04	816
13,	7.18	1800	1.66	507	2.30	1065	3.19	2077	1.62	479	‡3.61	2660	0.96	116	0.86	81	2.65	1425	2.33	1095	2.35	1115	2.39	1155
14,	*8.46	1800	1.66	507	2.43	1195	3.19	2077	1.57	446	2.71	1492	0.91	98	0.81	64	2.37	1135	2.17	936	2.17	936	3.14	2012
15,	5.48	6360	1.70	535	2.56	1328	4.02	3282	1.57	446	2.44	1205	0.91	98	0.84	74	2.27	1035	2.07	843	2.20	965	3.19	2077
16	4.76	4652	1.86	661	2.46	1225	3.72	2819	1.59	458	2.21	975	0.86	81	0.88	88	2.30	1065	2.03	807	2.23	995	3.56	2587
17,	3.66	2732	1.76	580	2.38	1145	3.47	2456	1.62	479	2.01	789	0.96	116	1.04	148	2.00	780	1.95	738	2.17	936	4.09	3394
18,	3.08	1935	1.86	661	2.30	1065	3.12	1986	1.62	479	1.86	661	1.11	180	0.98	123	1.80	610	2.35	1115	2.25	1015	3.74	2848
19,	2.78	1572	2.10	870	2.30	1065	2.89	1703	1.65	500	1.74	565	1.01	134	0.94	109	1.75	572	2.50	1265	2.57	1338	3.34	2274
20,	2.60	1370	1.96	746	2.26	1025	3.87	3044	1.99	772	1.64	493	1.01	134	0.86	81	1.65	500	2.40	1165	2.60	1370	3.04	1885
21,	2.38	1145	1.70	535	2.38	1145	4.15	3492	1.89	686	1.54	426	0.96	116	0.84	74	1.57	446	2.30	1065	2.47	1235	2.82	1619
22,	2.23	995	1.78	595	2.43	1195	3.92	3122	1.79	602	1.46	374	0.98	123	0.78	56	1.57	446	2.25	1015	2.40	1165	2.62	1392
23,	2.03	807	1.73	558	2.83	1631	3.72	2819	1.69	528	1.46	374	0.96	116	0.76	52	1.50	400	2.35	1115	2.30	1065	2.72	1503
24,	1.90	695	1.88	678	2.70	1480	3.35	2288	1.72	550	1.41	342	0.98	123	0.76	52	1.43	354	2.30	1065	2.25	1015	2.56	1328
25,	1.73	558	2.03	807	2.56	1328	3.05	1898	1.62	479	1.38	324	0.96	116	1.06	157	1.40	335	2.17	930	2.17	936	2.39	1156
26,	1.90	695	2.03	807	2.48	1245	2.85	1655	1.55	432	1.36	313	0.94	109	1.38	324	1.40	335	2.15	918	2.10	870	2.34	1105
27,	1.86	661	2.60	1370	3.33	2260	2.69	1469	1.47	380	1.36	313	0.91	98	1.44	361	1.35	308	2.07	843	2.03	807	2.42	1185
28,	2.70	1480	2.83	1631	†4.08	3378	2.55	1318	1.42	348	1.31	286	0.86	81	1.26	258	1.63	486	2.03	807	2.03	807	2.44	1205
29,	3.96	3186			4.13	3460	2.47	1235	1.37	318	1.26	258	0.86	81	3.48	2471	1.53	420	1.95	738	2.07	843	2.24	1005
30,	3.56	2587			4.23	3628	2.37	1135	1.32	291	1.18	215	0.81	64	3.01	1848	1.55	432	1.85	652	2.13	898	2.24	1005
31,	3.13	1999			3.70	2790			1.32	291			0.81	64	2.14	908			1.85	652			2.29	1055

*9.38 feet at 5.40 P. M.=17791 sec.-ft.
†5.48 feet at 7.45 A. M.= 6360 sec.-ft.
‡4.26 feet at 7 A. M.= 3680 sec.-ft.
Note:—Ice gorge January 1 to 14, inclusive, backwater. Estimated from ratio to West Branch Susquehanna River at Williamsport.

ESTIMATED MONTHLY DISCHARGE OF PINE CREEK, AT WATERVILLE, LYCOMING COUNTY.

(*Drainage Area 750 Square Miles.*)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1908.					
August,	535	95	192	0.256	0.295
September,	280	25	50	0.067	0.075
October,	400	60	115	0.153	0.176
November,	130	60	81	0.108	0.121
December,	400	60	262	0.350	0.404
1909.					
January,	14200	335	2498	3.331	3.840
February,	8830	740	2928	3.904	4.065
March,	2155	695	1261	1.681	1.938
April,	12200	1215	2537	3.384	3.775
May,	26260	400	2844	3.792	4.371
June,	2860	335	1003	1.337	1.492
July,	465	84	188	0.251	0.289
August	95	40	56	0.075	0.086
September,	650	25	210	0.280	0.312
October,	400	60	197	0.263	0.303
November,	95	40	59	0.079	0.088
December,	1015	40	285	0.380	0.438
The year,	26260	25	1172	1.563	20.997
1910.					
January,	7675	400	1242	1.656	1.909
February,	15600	400	1861	2.481	2.583
March,	14830	1245	4186	5.581	6.434
April,	28570	375	3253	4.336	4.838
May,	2660	495	1297	1.730	1.994
June,	1245	260	725	0.967	1.079
July,	375	75	177	0.236	0.272
August	130	25	64	0.085	0.098
September,	370	50	125	0.167	0.186
October,	175	50	84	0.112	0.129
November,	325	80	130	0.173	0.193
December,	3250	175	503	0.671	0.773
The year,	28570	25	1137	1.516	20.488
a1911.					
January,	17791	558	1891	2.521	2.906
February,	1751	507	817	1.089	1.134
March,	6360	465	1367	1.823	2.102
April,	3883	1055	2230	2.973	3.317
May,	1255	291	620	.827	.953
June,	3680	215	657	.876	.978
July,	195	64	126	.168	.194
August,	2471	52	287	.383	.442
September,	4630	308	897	1.196	1.335
October,	2500	652	1224	1.632	1.881
November	1370	486	887	1.183	1.320
December,	3394	602	1322	1.763	2.033
The year,	17791	52	1027	1.370	18.595

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a Ice gorge January 1-14 causing backwater. Estimated from ratio to West Branch Susquehanna River at Williamsport.

LYCOMING CREEK.

DESCRIPTION OF BASIN.

Lycoming creek, a tributary of the West Branch of the Susquehanna river, in the central part of Lycoming county, drains an approximate area of 275 square miles. Rising in the southwestern corner of Bradford county, it flows in a general southerly direction through Bradford, Tioga and Lycoming counties, a distance of 34 miles, to its mouth, a short distance above Williamsport. The upper portion of this stream and its tributaries lie within the glacial area, in a sparsely inhabited region, well covered with second growth timber, the valleys being generally narrow, the side hills high and steep, and the fall rapid. Throughout the lower section the valley is wide and the stream flows with slight fall through an agricultural region. There are numerous small tributaries, the largest being Roaring Branch. Only a few villages lie along this stream, the larger being near the mouth. This creek and its tributaries are used to some extent for power purposes by grist mills.

The mean annual precipitation over the greater portion of this watershed is from 40 to 45 inches.

The discharge of this creek has been measured since July 14, 1908, at Bridge No. 2 of the Northern Central Railroad, 3 miles above the mouth.

SUSQUEHANNA BASIN—STATION NO. 13.

LYCOMING CREEK AT BRIDGE NO. 2, NEAR WILLIAMSPORT

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania on July 14, 1908, in co-operation with the Northern Central Railroad Co., at a single span, steel, through-truss, highway bridge, just above the Northern Central Railroad Bridge No. 2, about 3 miles from Williamsport. It is the second highway bridge above the mouth, the Northern Central Railroad bridge crossing the creek on a skew about 200 feet below the station.

The channel is straight for one-fourth mile above the station, and is straight for several hundred feet below, with a riffle about 600 feet below. Both banks are high and only overflow during extreme high water. The bed is of rocks, gravel and clay, and is fairly permanent. The current is sluggish and the channel deep. A fish dam 300 feet downstream was partially destroyed in the fall of 1908, and entirely destroyed during the summer of 1910.

Discharge measurements are taken from the downstream side of the bridge during high stages, and by wading just below the bridge during low stages of the creek. The initial point for soundings is edge of bridge seat on downstream side of the left abutment.

A standard chain gage is bolted to the lower chord eyebar on the upstream side of the bridge. The length of chain from bottom of weight to center of marker is 19.41 feet. The elevation of zero is arbitrary datum. Bench Mark No. 1 is on right abutment, upstream face, furtherest upstream point on top of projecting course, 8th course down from bridge seat, elevation 8.184 ft. above gage datum. Bench Mark No. 2 is on left abutment, upstream corner of 2nd course from bottom, course being only 3 inches thick, elevation 5.872 ft. above gage datum. The gage is read twice daily by the Track Walker of the Northern Central Railroad Co.

On account of the change in channel conditions, due to the fish dam which existed below the station, two rating curves have been used during low water.

Since the establishment of this station, 25 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF LYCOMING CREEK, AT BRIDGE NO. 2, LYCOMING COUNTY, PENNA.

(Drainage Area 268 Square Miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1908.							
1	July 14,	Grant,	67	76	1.12	2.80	85	Wading msmt. below R. R. bridge.
2	Aug. 11,	do.	65	86	1.45	2.88	125	do.
3	Oct. 19,	do.	60	52	0.89	2.60	46	do.
	1909.							
4	Feb. 25,	Langenheim,	143	1007	3.06	6.05	3113	
5	Aug. 10,	Grant,	56	53	0.59	2.50	31	Wading msmt. below R. R. bridge.

DISCHARGE MEASUREMENTS OF LYCOMING CREEK, AT BRIDGE NO. 2, LYCOMING COUNTY, PENNA.—Continued.

(Drainage Area 268 Square Miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1910.							
6	Mar. 1,	Langenheim, ----------	143	1149	3.11	7.05	3577	
7	Mar. 1,	do.	143	1178	3.18	7.27	3753	
8	Mar. 2,	do.	143	1107	3.09	6.79	3420	
9	Mar. 2,	do.	143	1221	3.80	7.51	4654	
10	Mar. 3,	do.	143	1064	2.94	6.46	3126	
11	Mar. 3,	do.	143	1106	3.04	6.76	3373	
12	Mar. 4,	do.	138	951	2.54	5.64	2413	
13	Mar. 4,	do.	138.7	991	2.77	5.95	2751	
14	Mar. 5,	do.	137	894	2.31	5.27	2067	
15	Mar. 5,	do.	137.5	923	2.39	5.43	2212	
16	Mar. 6,	do.	137.7	937	2.38	5.49	2232	
17	Mar. 7,	do.	143	1150	3.20	7.08	3680	
18	April 26,	do.	143	1177	3.92	7.22	4324	
19	June 20,	do.	124	730	1.29	4.01	937	
20	July 16,	Ryder, ----------------	48	51	1.35	2.49	69	Wading msmt. 200 yds. below bridge.
	1911.							
21	Mar. 23,	Langenheim, ----------	123	698	1.04	3.82	727	0.6 msmt.
22	Mar. 31,	Reckord, --------------	126	764	1.44	4.30	1102	0.6 msmt.
23	April 1,	do.	124	706	1.14	3.90	805	0.6 msmt.
24	April 1,	do.	124	705	1.06	3.85	749	0.6 msmt.
	1912.							
25	May 21,	do.	124	705	0.79	3.50	556	0.6 msmt.

DISCHARGE TABLE FOR LYCOMING CREEK, AT BRIDGE NO. 2, LYCOMING COUNTY, FROM JULY 14, 1908, TO DEC. 31, 1909.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
2.30	8	.80	770	.30	2070	.70	3340	.10	4620
.40	15	.90	845	.40	2160	.80	3435	.20	4710
.50	25	4.00	925	.50	2250	.90	3530	.30	4800
.60	40	.10	1005	.60	2340	7.00	3620	.40	4890
.70	60	.20	1090	.70	2430	.10	3710	.70	5165
.80	90	.30	1175	.80	2525	.20	3800	.50	4985
.90	130	.40	1260	.90	2620	.30	3890	.60	5075
3.00	185	.50	1350	6.00	2710	.40	3980	.80	5255
.10	250	.60	1440	.10	2800	.50	4075	.90	5345
.20	320	.70	1530	.20	2890	.60	4165	9.00	5440
.30	390	.80	1620	.30	2980	.70	4255	.50	5915
.40	460	.90	1710	.40	3070	.80	4350	10.00	6390
.50	535	5.00	1800	.50	3160	.90	4440	.10	6485
.60	610	.10	1890	.60	3250	8.00	4530		
.70	690	.20	1980						

DISCHARGE TABLE FOR LYCOMING CREEK, AT BRIDGE NO. 2, LYCOMING COUNTY, FROM JAN. 1, 1910.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
2.20	42	.40	60	.60	85	.80	125	3.00	200
.30	50	.50	70	.70	100	.90	160	.10	250

Note:—This rating table is only applicable for low water subsequent to 1909. Regular rating table used above 3.1 feet.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LYCOMING CREEK, AT BRIDGE NO. 2, LYCOMING COUNTY, PENNA.

1908.	JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	2.8	90	2.7	60	2.8	90	3.2	320	2.8	90
2,	------	------	2.9	130	2.6	40	2.65	50	3.1	250	2.8	90
3,	------	------	2.7	60	2.6	40	2.6	40	3.05	220	2.8	90
4,	------	------	2.7	60	2.6	40	2.6	40	3.0	185	2.8	90
5,	------	------	3.15	285	2.6	40	2.6	40	3.1	250	2.9	130
6,	------	------	2.97	160	2.7	60	2.7	60	3.0	185	2.8	110
7,	------	------	3.3	390	2.6	40	2.6	40	2.9	130	2.9	130
8,	------	------	3.15	285	2.6	40	2.6	40	2.9	130	2.9	130
9,	------	------	3.05	220	2.6	40	2.6	40	2.9	130	2.9	130
10	------	------	2.9	130	2.6	40	2.6	40	3.0	185	3.0	185
11,	------	------	2.9	130	2.7	60	2.9	130	2.9	130	2.9	130
12,	------	------	2.9	130	2.65	50	2.8	90	2.9	130	2.9	130
13,	------	------	2.8	90	2.6	40	2.75	75	2.9	130	2.9	130
14,	2.8	90	2.8	90	2.6	40	2.7	60	2.8	90	2.9	130
15,	2.75	75	2.75	75	2.6	40	2.7	60	2.9	130	3.0	185
17,	2.7	60	3.0	185	2.5	25	2.7	60	2.8	9	2.9	130
17,	2.7	60	3.0	185	2.5	20	2.7	60	2.8	9	2.9	130
18,	2.8	90	3.15	285	2.6	40	2.6	40	2.8	90	2.9	130
19,	2.7	60	2.95	160	2.5	25	2.6	40	2.8	90	2.9	130
20,	2.6	40	2.9	130	2.5	25	2.6	40	2.9	130	3.0	185
21,	2.6	40	2.8	90	2.7	60	2.7	60	2.8	90	2.9	130
22,	3.15	285	2.85	110	2.6	40	2.55	32	2.9	130	2.9	130
23,	3.0	185	2.85	110	2.5	25	2.5	25	2.9	130	3.1	250
24	2.85	110	2.80	90	2.5	25	2.5	25	2.9	130	2.8	90
25,	4.0	925	2.7	60	2.5	25	2.8	90	2.95	160	3.0	185
26,	3.45	500	2.8	90	2.6	40	4.6	1440	2.9	130	2.9	130
27,	3.15	285	2.9	130	2.5	25	4.35	1220	2.9	130	2.9	130
28,	3.10	250	2.8	90	2.55	32	3.9	845	2.9	130	2.9	130
29,	2.9	130	2.7	60	2.95	160	4.4	1260	2.8	90	3.1	250
30,	2.9	130	2.6	40	2.75	75	3.95	885	2.9	130	3.0	185
31,	2.8	90	2.6	40	------	------	3.4	460	------	------	2.9	130

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LYCOMING CREEK, AT BRIDGE NO. 2., LYCOMING COUNTY, PENNA.

1909.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.9	130	3.5	535	4.2	1090	3.7	690	b9.55	5965	2.8	90	2.8	90	2.59	38	2.49	24	2.38	14	2.58	37	2.37	13
2,	2.9	130	3.7	690	4.1	1005	3.6	610	7.8	4350	2.8	90	2.8	90	2.59	38	2.49	24	2.38	14	2.58	37	2.37	13
3,	3.1	250	3.6	610	3.8	770	3.6	610	5.6	2340	2.8	90	2.7	60	2.59	38	2.49	24	2.28	8	2.58	37	2.37	13
4,	3.1	250	3.6	610	3.9	845	3.7	690	6.2	2890	2.8	90	2.7	60	2.59	38	2.49	24	2.28	8	2.58	37	2.37	13
5,	3.6	610	3.6	610	3.5	535	3.6	610	5.6	2340	6.75	3390	2.7	60	2.59	38	2.39	14	2.28	8	2.58	37	2.37	13
6	4.65	1485	4.2	1090	3.4	460	3.6	610	4.2	1090	4.9	1710	2.7	60	2.59	38	2.29	8	2.28	8	2.58	37	2.37	13
7,	4.2	1090	4.6	1440	3.4	460	4.2	1090	4.1	1005	4.2	1090	2.6	40	2.59	38	2.29	8	2.28	8	2.38	14	2.37	13
8,	3.7	690	4.1	1005	3.6	610	4.1	1005	4.05	965	3.8	770	2.6	40	2.39	14	2.29	8	2.28	8	2.38	14	2.37	13
9,	3.85	810	3.9	845	3.6	610	4.1	1005	3.9	845	3.7	690	2.6	40	2.39	14	2.29	8	2.28	8	2.38	14	2.37	13
10,	3.5	535	4.2	1090	3.9	845	3.8	770	3.7	690	3.8	770	2.5	25	2.59	38	2.29	8	2.28	8	2.38	14	2.37	13
11,	3.4	460	4.3	1175	3.4	460	3.6	610	3.6	610	3.7	690	2.6	40	2.39	14	2.29	8	2.28	8	2.38	14	2.37	13
12,	3.3	390	3.9	845	4.1	1005	3.6	610	3.6	610	3.65	650	2.6	40	2.39	14	2.39	14	2.58	37	2.38	14	2.37	13
13,	3.6	610	3.8	770	4.1	1005	3.6	610	3.5	535	3.4	460	2.6	40	2.39	14	2.39	14	2.58	37	2.38	14	4.95	1755
14,	3.6	610	3.8	770	3.9	845	8.6	5075	3.4	460	5.2	1980	2.6	40	2.39	14	2.39	14	2.48	23	2.38	14	4.65	1485
15,	3.6	610	5.1	1890	3.8	770	5.9	2620	3.4	460	4.25	1130	2.6	40	2.39	14	2.39	14	2.38	14	2.38	14	3.8	770
16,	3.7	690	5.3	2070	3.8	770	5.1	1800	3.4	460	4.0	925	2.6	40	2.39	14	2.39	14	2.38	14	2.38	14	3.0	185
17,	3.8	770	5.3	2070	3.5	535	4.6	1440	3.4	460	3.7	690	2.6	40	2.59	38	2.39	14	2.38	14	2.38	14	2.75	75
18,	3.8	770	4.7	1530	3.4	460	4.2	1090	3.4	460	5.3	2070	2.6	40	2.59	38	2.39	14	2.38	14	2.38	14	2.75	75
19,	3.3	390	4.4	1260	3.3	390	4.1	1005	3.3	390	5.0	1800	2.6	40	2.49	24	2.29	8	2.38	14	2.38	14	2.8	90
20,	3.5	535	6.4	3070	3.5	535	3.9	815	3.2	320	3.8	770	2.5	25	2.49	24	2.29	8	2.38	14	2.38	14	2.65	50
21,	3.4	460	5.1	1890	3.2	320	3.6	610	3.2	320	3.5	535	2.6	40	2.49	24	2.29	8	2.38	14	2.38	14	2.7	60
22	3.4	460	4.7	1530	3.2	320	3.6	610	3.05	220	3.3	390	2.6	40	2.49	24	2.29	8	2.38	14	2.38	11	2.65	50
23,	3.4	460	4.6	1440	3.2	320	3.9	845	3.0	185	3.3	390	2.6	40	2.49	24	2.29	8	2.38	14	2.38	14	2.65	50
24,	3.8	770	7.05	3665	3.2	320	3.9	845	3.0	185	3.3	390	2.6	40	2.49	24	2.39	14	2.58	37	2.38	14	2.7	60
25,	5.0	1800	6.4	3070	3.4	460	3.9	845	3.0	185	3.2	320	2.6	40	2.39	14	2.34	11	2.58	37	2.38	14	2.65	50
26,	4.5	1350	5.1	1890	4.4	1260	3.9	845	3.0	185	3.1	250	2.6	40	2.39	14	2.39	14	2.58	37	2.38	14	2.7	60
27,	4.1	1005	4.6	1440	4.2	1090	3.9	845	3.0	185	2.9	130	2.6	40	2.39	14	2.39	14	2.58	37	2.38	11	2.65	50
28,	3.8	770	4.4	1260	4.1	1005	3.6	610	3.3	390	3.1	250	2.6	40	2.39	14	2.39	14	2.58	37	2.38	14	2.65	50
29,	3.8	770	-----	-----	3.9	845	3.9	845	3.0	185	3.1	250	2.6	40	2.54	31	2.39	14	2.58	37	2.38	14	2.7	60
30,	3.8	770	-----	-----	3.9	845	a8.25	4755	3.1	250	2.9	130	2.6	40	2.49	24	2.39	14	2.58	37	2.38	11	2.65	50
31,	3.5	535	-----	-----	3.9	845	-----	-----	2.9	130	-----	-----	2.5	25	2.39	14	-----	-----	2.58	37	-----	-----	2.7	60

a 8.9 feet at 3.40 P. M.—5345 sec.-ft.
b 10.1 feet at 3 P. M.=6485 sec.-ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LYCOMING CREEK, AT BRIDGE NO. 2., LYCOMING COUNTY, PENNA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.67	96	3.15	285	7.10	3710	3.35	425	4.05	965	3.25	355	2.75	112	2.40	60	2.30	50	2.40	60	2.30	50	2.50	70
2	2.57	80	3.25	355	7.00	3620	3.25	355	3.80	770	3.15	285	2.65	92	2.40	60	2.30	50	2.40	60	2.30	50	2.50	70
3,	2.57	80	3.05	225	6.75	3390	3.25	355	3.55	575	3.15	285	2.65	92	2.40	60	2.35	55	2.40	60	2.30	50	2.50	70
4,	2.57	80	3.05	225	5.80	2525	3.20	320	3.45	498	3.15	285	2.65	92	2.30	50	2.90	160	2.40	60	2.30	50	2.90	160
5,	2.57	80	3.10	250	5.45	2205	3.20	320	3.50	535	3.00	200	2.65	92	2.30	50	2.75	112	2.40	60	2.30	50	2.75	112
6,	2.57	80	3.05	225	5.10	1890	3.05	225	3.45	498	3.25	355	2.55	78	2.30	50	2.60	85	2.40	60	2.40	60	2.60	85
7,	2.57	80	3.00	200	6.80	3435	3.00	200	3.45	498	3.15	285	2.55	78	2.30	50	2.50	70	2.40	60	2.40	60	2.50	70
8,	2.57	80	2.85	142	5.20	1980	2.95	180	3.25	355	3.05	225	2.55	78	2.30	50	2.50	70	2.40	60	2.40	60	2.50	70
9,	2.57	80	2.85	142	4.70	1530	2.90	160	3.25	355	3.05	225	2.55	78	2.30	50	2.45	65	2.30	50	2.40	60	2.45	65
10,	2.57	80	2.90	160	4.45	1305	2.80	125	3.30	390	3.30	390	2.60	85	2.30	50	2.40	60	2.30	50	2.40	60	2.40	60
11,	2.57	80	2.85	142	4.05	965	2.75	112	3.15	285	3.55	575	2.55	78	2.30	50	2.40	60	2.30	50	2.40	60	2.50	70
12,	2.57	80	2.85	142	4.15	1050	2.75	112	3.05	225	3.55	575	2.55	78	2.50	70	2.40	60	2.30	50	2.40	60	2.50	70
13,	2.57	80	2.85	142	4.00	925	2.75	112	3.05	225	3.45	498	2.65	92	2.35	55	2.40	60	2.30	50	2.40	60	2.50	70
14,	2.57	80	2.85	142	4.30	1175	2.75	112	2.95	180	3.45	498	2.55	78	2.40	60	2.40	60	2.30	50	2.40	60	2.50	70
15,	2.57	80	2.90	160	4.00	925	2.80	125	3.00	200	3.40	460	2.60	85	2.40	60	2.40	60	2.30	50	2.40	60	2.50	70
16,	2.57	80	2.85	142	4.10	1005	2.75	112	2.85	142	3.50	535	2.55	78	2.40	60	2.40	60	2.30	50	2.40	60	2.50	70
17,	2.57	80	2.85	142	4.00	925	2.85	142	2.85	142	6.65	3295	3.00	200	2.40	60	2.40	60	2.30	50	2.40	60	2.50	70
18	2.57	80	2.85	142	3.95	885	3.35	425	2.85	142	5.15	1935	2.90	160	2.40	60	2.40	60	2.30	50	2.40	60	2.50	70
19,	2.57	80	2.85	142	3.95	885	4.10	1005	2.85	142	4.15	1045	2.80	125	2.40	60	2.40	60	2.30	50	2.40	60	2.50	70
20.	2.57	80	2.90	160	4.00	925	4.80	1620	2.90	160	4.10	1005	2.80	125	2.40	60	2.40	60	2.30	50	2.40	60	2.50	70
21,	5.10	1890	2.85	142	4.35	1220	4.50	1350	2.85	142	3.50	535	2.60	85	2.40	60	2.40	60	2.30	50	2.40	60	2.50	70
22,	a8.25	4755	2.85	142	4.35	1220	4.10	1005	3.05	225	3.55	575	2.50	70	2.40	60	2.40	60	2.30	50	2.40	60	2.50	70
23,	5.55	2295	2.85	142	4.25	1135	3.75	730	2.95	180	3.45	498	2.50	70	2.40	60	2.40	60	2.30	50	2.40	60	2.50	70
24,	5.25	2025	2.85	142	4.15	1050	10.35	6725	2.95	180	3.25	355	3.20	320	2.40	60	2.40	60	2.30	50	2.40	60	2.50	70
25,	3.55	575	2.90	160	4.35	1220	9.00	5440	2.95	180	3.20	320	2.40	60	2.40	60	2.40	60	2.30	50	2.40	60	2.50	70
26,	3.55	575	2.85	142	4.55	1395	*10.10	6485	2.85	142	2.85	142	2.40	60	2.40	60	2.40	60	2.30	50	2.40	60	2.50	70
27,	3.40	460	2.85	142	3.85	810	6.50	3160	4.45	1305	2.85	142	2.40	60	2.40	60	2.40	60	2.30	50	2.30	50	2.50	70
28,	3.35	425	6.25	2935	3.85	810	5.20	1980	3.95	885	2.85	142	2.40	60	2.40	60	2.40	60	2.30	50	2.30	50	2.50	70
29,	3.40	460	-----	-----	3.65	650	4.20	1090	3.65	650	2.80	125	2.40	60	2.30	50	2.40	60	2.30	50	2.30	50	2.50	70
30,	3.15	285	-----	-----	3.60	610	4.50	1350	3.50	535	2.80	125	2.40	60	2.30	50	2.40	60	2.30	50	2.30	50	2.50	70
31,	3.15	285	-----	-----	3.45	498	-----	-----	3.40	460	-----	-----	2.40	60	2.30	50	-----	-----	2.30	50	-----	-----	2.50	70

aMaximum 8.45 feet at 3.15 P. M.=4938 sec.-ft.
*Maximum 12.85 feet at 7.45 A. M.=8900 sec.-ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LYCOMING CREEK, AT BRIDGE NO. 2., LYCOMING COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.5	535	3.2	320	2.8	125	3.9	845	4.35	1218	2.4	60	2.4	60	2.2	42	2.8	125	3.3	390	3.3	390	2.9	160
2,	3.4	460	3.2	320	2.8	125	4.4	1260	4.2	1090	2.4	60	2.4	60	2.2	42	2.75	112	3.9	845	3.15	285	2.9	160
3,	3.4	460	3.2	320	2.8	125	4.8	1620	4.0	925	2.4	60	2.4	60	2.4	60	2.6	85	3.35	425	3.0	200	2.9	160
4,	3.3	390	3.2	320	2.8	125	4.8	1620	3.75	730	2.4	60	2.3	50	2.65	92	2.6	85	2.9	160	2.9	160	2.9	160
5,	3.3	390	*3.2	320	2.8	125	4.8	1620	3.2	320	2.4	60	2.3	50	2.9	160	2.9	160	3.0	200	2.8	125	2.9	160
6,	3.25	355	*3.2	320	2.9	160	4.9	1710	3.0	200	2.4	60	2.3	50	*2.8	125	2.9	160	3.0	200	2.8	125	2.9	160
7,	3.1	250	*3.1	250	3.15	285	4.9	1710	2.4	60	2.4	60	2.3	50	*2.7	100	3.1	250	2.95	180	4.05	965	2.9	160
8,	3.5	535	*3.1	250	3.45	498	5.4	2160	2.4	60	2.4	60	2.3	50	*2.5	70	2.9	160	3.2	320	3.6	610	2.9	160
9,	3.5	535	*3.1	250	3.5	535	5.35	2115	2.4	60	2.4	60	2.3	50	*2.5	70	4.4	1260	3.2	320	3.5	535	2.9	160
10,	3.5	535	*3.0	200	3.6	610	5.4	2160	2.4	60	2.4	60	2.3	50	*2.5	70	4.4	1260	3.2	320	3.15	285	2.9	160
11,	3.5	535	*3.0	200	3.65	650	5.35	2115	2.4	60	2.4	60	2.25	46	*2.4	60	3.9	845	3.2	320	3.05	225	2.9	160
12,	3.45	498	2.9	160	3.8	770	5.25	2025	2.4	60	2.6	85	2.25	46	*2.4	60	3.6	610	3.05	225	3.6	610	2.9	160
13,	3.4	460	2.9	160	3.2	320	5.15	1935	2.4	60	2.75	112	2.2	42	2.3	50	3.05	225	3.0	200	3.65	650	2.95	180
14,	4.15	1048	2.9	160	3.2	320	5.1	1890	2.4	60	3.0	200	2.2	42	2.3	50	2.9	160	3.0	200	3.45	498	3.25	355
15,	4.9	1710	2.9	160	3.2	320	5.1	1890	2.4	60	2.85	142	2.2	42	2.3	50	2.9	160	2.8	125	3.35	425	3.45	498
16,	4.7	1530	2.9	160	3.2	320	4.9	1710	2.4	60	2.7	100	2.2	42	2.3	50	2.9	160	2.8	125	3.3	390	3.9	845
17,	4.6	1440	2.9	160	3.2	320	4.5	1350	2.4	60	2.6	85	2.4	60	2.3	50	2.8	125	2.8	125	3.25	355	4.45	1305
18,	4.4	1260	2.9	160	3.2	320	4.5	1350	2.4	60	2.55	78	2.35	55	2.3	50	*2.8	125	3.5	535	3.25	355	3.9	845
19,	3.9	845	2.9	160	3.2	320	4.5	1350	2.4	60	2.5	70	2.3	50	2.3	50	*2.8	125	3.9	845	3.3	390	3.8	770
20,	3.7	690	2.9	160	3.55	572	4.7	1530	2.4	60	2.5	70	2.25	46	2.3	50	*2.7	100	3.9	845	3.3	390	3.65	650
21,	3.3	390	2.9	160	3.4	460	4.35	1218	2.4	60	2.5	70	2.2	42	2.3	50	*2.7	100	3.6	610	3.3	390	3.5	535
22,	3.3	390	2.9	160	3.4	460	4.35	1218	2.4	60	2.4	60	2.2	42	2.25	46	*2.7	100	3.75	730	3.2	320	3.5	535
23,	3.3	390	2.9	160	3.35	425	4.3	1175	2.4	60	2.4	60	2.3	50	2.4	60	*2.6	85	4.5	1350	3.2	320	3.1	250
24,	3.45	498	2.9	160	3.35	425	4.6	1440	2.4	60	2.4	60	2.3	50	2.5	70	2.6	85	3.9	845	3.1	250	3.6	610
25,	3.75	730	2.9	160	3.2	320	4.6	1440	2.4	60	2.4	60	2.3	50	2.5	70	2.5	70	3.8	770	3.1	250	3.6	610
26,	3.9	845	2.9	160	2.95	180	4.55	1395	2.4	60	2.4	60	2.3	50	2.5	70	2.5	70	3.6	610	3.1	250	3.55	572
27,	4.1	1005	2.8	125	4.0	925	4.5	1350	2.4	60	2.4	60	2.3	50	2.6	85	2.5	70	3.45	498	3.0	200	3.5	535
28,	4.1	1005	2.8	125	4.5	1350	4.4	1260	2.4	60	2.4	60	2.3	50	2.55	78	2.5	70	3.15	285	2.95	180	3.45	498
29,	3.2	320	-----	-----	4.35	1218	4.4	1260	2.4	60	2.4	60	2.3	50	2.6	85	2.8	125	3.45	498	2.9	160	3.45	498
30,	3.2	320	-----	-----	4.3	1175	4.4	1260	2.4	60	2.4	60	2.2	42	3.35	425	3.3	390	3.35	425	2.9	160	3.4	460
31,	3.2	320	-----	-----	4.2	1090	-----	-----	2.4	60	-----	-----	2.2	42	2.9	160	-----	-----	3.35	425	-----	-----	3.4	460

*Estimated.

ESTIMATED MONTHLY DISCHARGE OF LYCOMING CREEK, AT BRIDGE NO. 2, LYCOMING COUNTY.

(Drainage Area 268 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1908.					
August,	390	40	131	0.489	0.564
September	160	25	46	0.172	0.192
October,	1440	25	242	0.903	1.041
November,	320	90	144	0.537	0.599
December,	250	90	140	0.522	0.602
1909.					
January,	1800	130	676	2.522	2.907
February,	3665	535	1434	5.351	5.571
March,	1260	320	698	2.604	3.002
April,	5345	610	1171	4.369	4.875
May,	6485	130	957	3.571	4.117
June,	3390	90	766	2.858	3.189
July,	90	25	44	0.164	0.189
August,	38	14	25	0.093	0.107
September,	24	8	13	0.048	0.053
October	37	8	20	0.075	0.087
November,	37	14	19	0.071	0.079
December,	1755	13	169	0.631	0.727
The year,	6485	8	499	1.863	24.903
1910.					
January,	4938	80	505	1.884	2.172
February,	2935	142	272	1.015	1.057
March,	3710	498	1480	5.522	6.366
April,	8900	112	1195	4.459	4.975
May,	1305	142	392	1.463	1.687
June,	3295	125	542	2.022	2.256
July,	320	60	95	0.354	0.408
August,	70	50	57	0.213	0.246
September,	160	50	66	0.246	0.275
October,	60	50	53	0.198	0.228
November,	60	50	57	0.213	0.238
December,	160	60	74	0.276	0.318
The year	8900	50	399	1.489	20.226
1911.					
January,	1710	320	667	2.489	2.870
February,	320	125	204	0.761	0.792
March,	1350	125	483	1.802	2.077
April,	2160	845	1566	5.843	6.519
May,	1218	60	193	0.720	0.830
June,	200	60	74	0.276	0.308
July,	60	42	49	0.183	0.211
August,	425	42	82	0.306	0.353
September,	1260	70	249	0.929	1.037
October,	1350	125	450	1.679	1.936
November,	965	125	348	1.298	1.448
December,	1305	160	417	1.556	1.794
The year,	2160	42	398	1.487	20.175

Gaging Station on West Branch of Susquehanna River, at Williamsport.

SUSQUEHANNA BASIN—STATION No. 14.

WEST BRANCH OF SUSQUEHANNA RIVER AT WILLIAMSPORT.

DESCRIPTION OF STATION.

This station was established by the United States Weather Bureau on March 1, 1895, at the Market Street bridge, Williamsport.

The channel is about 1,000 feet wide at the station, broken by four piers. It is straight for one-half mile above to a low wooden dam, while below it is straight for several hundred feet. Both banks are high and rocky and do not overflow. There is a fair velocity except at low stages, when wading measurements are made just below the dam above the bridge. The bed is of rock and gravel, and fairly permanent.

Discharge measurements are taken from the upstream side of the bridge, the initial point for soundings being the face of the left abutment.

A standard chain gage is fastened to the upstream handrail in the first span from the left end. The length of chain from bottom of weight to center of marker is 40.24 feet. The elevation of zero is arbitrary datum. Bench Mark No. 1 is cut in face of left abutment, 10.00 feet above gage datum. The gage is read once daily by Henry H. Guise, Clerk in the City Engineer's Office.

Since the establishment of this station, 29 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

(Drainage Area 5680 Square Miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1901.							
1	Aug. 16,	Paul.	------	2,851	0.68	0.90	1,932	
2	Oct. 25,	do.	------	2,510	0.72	0.66	1,807	
	1902.							
3	April 20,	Paul.	------	5,188	1.80	3.90	9,318	
4	Sept. 18,	do.	------	1,997	0.54	0.41	1,006	

DISCHARGE MEASUREMENTS OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.—Continued.

(Drainage Area 5680 Square Miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet	Sq. ft	**Ft.** per sec.	Feet.	Sec.-ft.	
	1903.							
5	Mar. 6,	Murphy,	-----	8,629	2.80	7.12	24,138	
6	April 3,	do.	------	6,840	2.14	5.24	14,675	
7	June 4,	Hoyt,	------	2,769	0.70	0.85	1,954	
8	June 27,	Walker,	------	9,130	2.22	6.40	20,400	
9	Oct. 7.	Sawyer,	------	3,270	1.08	1.77	3,525	
	1904.							
10	July 19,	Taylor,	------	3,874	1.09	2.07	4,220	
11	Sept. 14,	Hoyt,	------	2,550	0.53	0.52	1,340	
12	Sept. 30,	do.	------	3,040	0.67	1.10	2,060	
	1905.							
13	Mar. 22,	Comstock,	935	16,580	5.23	15.82	86,780	
14	Mar. 22,	do.	935	16,190	5.09	15.47	82,350	
15	Mar. 23,	do.	935	13,480	4.30	12.64	57,960	
16	Mar. 23,	do.	935	14,190	4.38	13.33	62,150	
17	Mar. 24,	do.	935	12,150	3.81	11.05	46,250	
18	Mar. 25,	do.	935	12,050	3.64	10.98	43,930	
19	Mar. 28,	Harley,	935	11,140	3.57	10.12	39,730	
20	Mar. 31,	do.	935	8,022	2.78	6.92	22,330	
21	July 7,	Grover & Biggi,	783	3,976	1.05	2.25	4,179	
	1906.							
22	June 30,	U. S. G. S.,	744	3,620	0.65	1.27	2,360	
	1907.							
23	July 23,	Horton,	722	3,570	0.78	1.39	2,780	
24	Oct. 14,	Grant,	766	3,860	0.87	1.72	3,350	
	1908.							
25	Feb. 16,	Grant & Ryder,	934	17,425	5.68	16.32	99,118	Float Measurement.
26	Mar. 20,	Gannett & Langenheim.	934	17,604	5.39	16.84	95,418	Surface measurement.
27	Sept. 7,	Grant,	228	373	1.64	0.29	614	Wading measurement 500 feet below dam.
	1910.							
28	April 26,	Langenheim,	942	18,241	5.40	17.23	98,462	
	1912.							
29	May 23,	Boehringer & Reckord.	894	6,055	1.86	4.47	11,290	Surface measurement.

DISCHARGE TABLE FOR WEST BRANCH SUSQUEHANNA RIVER AT WILLIAMSPORT, LYCOMING COUNTY, FROM MARCH 1, 1895, TO DEC. 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet..	Sec.-ft..	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.10	355	.50	11620	.80	32405	13.00	60200	.20	100080
.20	525	.60	12020	.90	32940	.10	61040	.30	101120
.30	700	.70	12430	9.00	33475	.20	61880	.40	102160
.40	875	.80	12850	.10	34035	.30	62720	.50	103200
.50	1055	.90	13275	.20	34595	.40	63560	.60	104240
.60	1235	5.00	13700	.30	35155	.50	64400	.70	105280
.70	1420	.10	14125	.40	35715	.60	65300	.80	106320
.80	1605	.20	14550	.50	36275	.70	66200	.90	107360
.90	1785	.30	14985	.60	36840	.80	67100	18.00	108400
1.00	1970	.40	15425	.70	37405	.90	68000	.10	109480
.10	2155	.50	15900	.80	37970	14.00	68900	.20	110560
.20	2340	.60	16375	.90	38535	.10	69810	.30	111640
.30	2525	.70	16850	10.00	39100	.20	70720	.40	112720
.40	2710	.80	17325	.10	39700	.30	71630	.50	113800
.50	2900	.90	17810	.20	40300	.40	72540	.60	114920
.60	3095	6.00	18300	.30	40900	.50	73450	.70	116040
.70	3290	.10	18780	.40	41500	.60	74380	.80	117160
.80	3490	.20	19260	.50	42100	.70	75310	.90	118280
.90	3695	.30	19740	.60	42720	.80	76240	19.00	119400
2.00	3905	.40	20220	.70	43340	.90	77170	.10	120520
.10	4115	.50	20700	.80	43960	15.00	78100	.20	121640
.20	4325	.60	21185	.90	44580	.10	79060	.30	122760
.30	4575	.70	21670	11.00	45200	.20	80020	.40	123880
.40	4825	.80	22155	.10	45880	.30	80980	.50	125000
.50	5075	.90	22640	.20	46560	.40	81940	.60	126140
.60	5325	7.00	23125	.30	47240	.50	82900	.70	127280
.70	5600	.10	23620	.40	47920	.60	83900	.90	129560
.80	5875	.20	24115	.50	48600	.70	84900	.80	128420
.90	6150	.30	24610	.60	49340	.80	85900	20.00	130700
3.00	6425	.40	25105	.70	50080	.90	86900	.10	131860
.10	6710	.50	25600	.80	50820	16.00	87900	.20	133020
.20	7000	.60	26120	.90	51560	.10	88900	.30	134180
.30	7300	.70	26640	12.00	52300	.20	89900	.40	135340
.40	7620	.80	27160	.10	53080	.30	90900	.50	136500
.50	7960	.90	27680	.20	53860	.40	91900	.60	137675
.60	8300	8.00	28200	.30	54640	.50	92900	.70	138850
.70	8650	.10	28720	.40	55420	.60	93920	.80	140025
.80	9000	.20	29240	.50	56200	.70	94940	.90	141200
.90	9350	.30	29760	.60	57000	.80	95960	21.00	142375
4.00	9700	.40	30280	.70	57800	.90	96980	.10	143550
.10	10075	.50	30800	.80	58600	17.00	98000		
.20	10450	.60	31335	.90	59400	.10	99040		
.30	10830	.70	31870						
.40	11225								

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

1895.	MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	8.0	28200	6.0	18300	2.1	4115	2.4	4825	4.5	11620	0.3	700	0.4	875	0.13	410	0.13	410	1.5	2900
2,	9.0	33475	6.0	18300	1.9	3695	2.1	4115	3.7	8650	0.2	525	0.4	875	0.13	410	0.13	410	1.6	3095
3,	10.5	42100	7.2	24115	1.9	3695	1.9	3695	3.0	6425	0.2	525	0.3	700	0.2	525	0.13	410	1.5	2900
4,	9.5	36275	6.5	20700	1.9	3695	1.8	3490	2.3	4575	0.13	410	0.3	700	0.3	700	0.13	410	1.4	2710
5,	9.0	33475	5.8	17325	1.8	3490	1.5	2900	1.7	3290	0.13	410	0.2	525	0.3	700	0.13	410	1.4	2710
6,	6.5	20700	5.4	15425	1.8	3490	1.5	2900	1.5	2900	0.13	410	0.2	525	0.2	525	0.13	410	1.3	2525
7,	4.5	11620	6.0	18300	1.6	3095	1.4	2710	1.5	2900	0.13	410	0.13	410	0.13	410	0.13	410	1.0	1970
8,	4.5	11620	7.0	23125	2.2	4325	1.2	2340	1.3	2525	0.3	700	0.13	410	0.2	525	0.13	410	1.1	2155
9,	5.0	13700	11.0	45200	2.9	6150	0.8	1605	1.2	2340	0.3	700	0.13	410	0.2	525	0.13	410	1.1	2155
10,	5.2	14550	12.0	52300	3.2	7000	0.5	1055	1.6	3095	0.3	700	0.3	700	0.13	410	0.3	700	1.0	1970
11,	5.3	14985	11.0	45200	2.8	5875	0.4	875	1.5	2900	0.4	875	1.6	3095	0.13	410	0.3	700	1.0	1970
12,	5.5	15900	7.9	27680	2.7	5600	0.2	525	1.5	2900	0.7	1420	1.8	3490	0.2	525	0.4	875	0.9	1785
13,	5.5	15900	6.5	20700	2.8	5875	0.2	525	1.6	3095	1.8	3490	0.9	1785	0.2	525	0.4	875	0.8	1605
14,	5.2	14550	8.0	28200	4.3	10830	0.4	875	1.5	2900	1.5	2900	0.7	1420	0.2	525	0.3	700	0.6	1235
15,	6.0	18300	10.5	42100	3.8	9000	0.8	1605	1.4	2710	0.5	1055	0.5	1055	0.2	525	0.3	700	0.4	875
16,	6.5	20700	8.5	30800	3.3	7300	0.8	1605	1.3	2525	0.6	1235	0.4	875	0.3	700	0.2	525	0.3	700
17,	5.5	15900	6.0	18300	3.0	6425	0.7	1420	1.2	2340	0.7	1420	0.6	1235	0.2	525	0.2	525	0.3	700
18,	5.0	13700	5.3	14985	2.8	5875	0.7	1420	1.1	2155	0.9	1785	0.13	410	0.2	525	0.2	525	0.3	700
19	4.7	12430	5.3	14985	2.6	5325	0.6	1235	1.0	1970	1.1	2155	0.2	525	0.2	525	0.2	525	0.2	525
20,	4.5	11620	5.3	14985	2.8	5875	0.6	1235	0.8	1605	1.1	2155	0.2	525	0.2	525	0.3	700	0.2	525
21,	4.2	10470	4.5	11620	2.2	4325	0.6	1235	0.7	1420	1.1	2155	0.13	410	0.2	525	0.3	700	0.2	525
22,	4.5	11620	3.6	8300	2.0	3905	0.4	875	0.9	1785	1.2	2340	0.13	410	0.2	525	0.3	700	1.6	3095
23,	5.0	13700	3.4	7620	1.9	3695	1.0	1970	0.8	1605	1.3	2525	0.13	410	0.2	525	0.2	525	2.4	4825
24,	5.5	15900	3.2	7000	1.8	3490	1.4	2710	0.8	1605	1.4	2710	0.13	410	0.13	410	0.2	525	2.6	5325
25,	6.0	18300	2.9	6150	1.7	3290	1.7	3290	0.9	1785	1.4	2710	0.13	410	0.13	410	0.4	875	2.4	4825
26,	8.7	31870	2.6	5325	1.7	3290	1.3	2525	1.0	1970	1.5	2900	0.13	410	0.13	410	0.5	1055	2.2	4325
27,	9.2	34590	2.6	5325	2.0	3905	1.7	3290	0.5	1055	1.3	2525	0.13	410	0.13	410	2.9	6150	2.4	4825
28,	7.7	26640	2.5	5075	3.5	7960	6.2	19260	0.13	410	1.3	2525	0.13	410	0.13	410	3.1	6710	7.0	23125
29,	6.7	21670	2.5	5075	3.6	8300	4.9	13275	0.13	410	1.3	2525	0.13	410	0.13	410	2.3	4575	6.5	20700
30,	6.5	20700	2.2	4325	3.2	7000	4.0	9700	0.13	410	1.4	2710	0.2	525	0.13	410	2.1	4125	4.5	11620
31,	6.3	19740	------	------	3.0	6425	------	------	0.4	875	1.4	2710	------	------	0.13	410	------	------	5.4	15425

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

1896. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.8	22155	1.9	3695	6.5	20700	13.0	60200	3.5	7960	1.8	3490	3.1	6710	6.5	20700	0.5	1055	6.8	22155	2.3	4575	4.0	9700
2,	4.5	11620	2.0	3905	6.6	21185	11.0	45200	3.4	7620	2.0	3905	2.7	5600	6.7	21670	0.4	875	6.8	22155	2.3	4575	3.8	9000
3	4.1	10075	2.4	4825	6.1	18780	10.0	39100	3.1	6710	1.7	3290	2.3	4575	6.9	22640	0.4	875	5.8	17325	2.3	4575	3.3	7300
4,	3.8	9000	4.1	10075	4.7	12430	8.5	30800	3.0	6425	1.4	2710	2.0	3905	5.9	17810	0.4	875	4.5	11620	2.1	4115	3.1	6710
5,	3.5	7960	4.1	10075	3.9	9350	7.1	23620	2.8	5875	1.3	2525	2.3	4575	4.8	12850	0.4	875	3.2	7000	2.5	5075	2.9	6150
6,	3.3	7300	3.9	9350	4.1	10075	6.1	18780	2.6	5323	1.2	2340	2.4	4825	4.0	9700	0.5	1055	1.7	3290	7.5	25600	2.4	4825
7,	3.1	6710	10.8	43960	4.0	9700	5.8	17325	2.4	4825	1.4	2710	2.3	4575	3.5	7960	0.5	1055	1.5	2900	6.9	22640	2.0	3905
8,	2.9	6150	9.2	34590	3.9	9350	5.6	16375	2.3	4575	1.6	3095	2.1	4115	3.7	8650	0.6	1235	1.3	2525	6.2	19260	1.7	3290
9,	2.4	4825	6.8	22155	3.9	9350	5.1	14125	2.2	4325	2.6	5325	2.0	3905	3.2	7000	0.7	1420	0.9	1785	5.4	15425	3.2	7000
10,	2.4	4825	6.1	18780	3.8	9000	4.7	12430	2.1	4115	5.3	14985	3.3	7300	2.9	6150	0.6	1235	0.9	1785	4.5	11620	4.4	11225
11,	2.3	4575	5.3	14985	3.6	8300	4.8	12850	1.9	3695	4.3	10830	3.0	6425	2.7	5600	0.4	875	0.8	1605	4.3	10830	5.0	13700
12,	2.1	4115	4.3	10830	3.1	6710	5.3	14985	1.9	3695	3.4	7620	2.6	5325	2.5	5075	0.4	875	0.7	1420	3.9	9350	4.2	10450
13,	2.0	3905	4.1	10075	2.4	4825	5.7	16850	1.6	3095	2.9	6150	2.2	4325	2.2	4325	0.4	875	9.8	37970	4.0	9700	4.0	9700
14,	2.0	3905	3.7	8650	2.7	5600	7.8	27160	1.6	3095	2.5	5075	1.9	3695	2.5	5075	0.4	875	10.8	43960	4.0	9700	3.5	7960
15,	1.8	3490	3.7	8650	2.4	4825	8.3	29760	1.5	2900	2.2	4325	1.7	3290	2.3	4575	0.5	1055	9.8	37970	3.6	8300	3.3	7300
16,	1.7	3290	4.6	12020	2.0	3905	7.5	25600	1.5	2900	2.2	4325	1.8	3490	2.1	4115	0.6	1235	8.2	29240	3.1	6710	3.2	7000
17,	1.5	2900	4.3	10830	2.4	4825	6.8	22155	1.5	2900	2.1	4115	1.9	3695	1.8	3490	0.6	1235	6.5	20700	3.1	6710	2.9	6150
18,	1.4	2710	3.6	8300	2.5	5075	6.1	18780	1.6	3095	4.1	10075	2.2	4325	1.5	2900	0.9	1785	6.1	18780	3.0	6425	2.9	6150
19,	1.3	2525	3.2	7000	2.4	4825	5.7	16850	1.4	2710	4.0	9700	2.3	4575	1.4	2710	0.6	1235	5.4	15425	2.8	5875	2.7	5600
20	1.3	2525	1.7	3290	3.6	8300	5.2	14550	1.3	2525	3.5	7960	1.8	3490	1.2	2310	1.5	2900	4.7	12430	2.7	5600	2.5	5075
21,	1.4	2710	1.5	2900	3.8	9000	4.7	12430	1.4	2710	3.0	6425	1.6	3095	1.0	1970	2.0	3905	4.0	9700	2.7	5600	2.2	4325
22,	1.4	2710	2.2	4325	3.8	9000	4.7	12430	1.3	2525	2.6	5325	1.7	3290	0.9	1785	1.6	3095	3.7	8650	2.7	5600	2.2	1325
23,	1.4	2710	1.9	3695	4.5	11620	4.5	11620	1.3	2525	2.4	4825	1.8	3490	0.9	1785	0.7	1420	3.6	8300	2.6	5325	2.1	4115
24,	1.6	3095	2.3	4575	4.2	10450	4.4	11225	1.1	2155	2.1	4115	2.0	3905	0.8	1605	0.6	1235	3.5	7960	2.6	5325	2.4	4825
25,	2.5	5075	3.2	7000	4.1	10075	4.1	10075	1.0	1970	3.5	7960	2.5	5075	1.0	1970	0.3	700	3.4	7620	2.8	5875	2.2	4325
26,	2.7	5600	3.1	6710	4.2	10450	4.2	10450	1.1	2155	7.0	23125	3.1	6710	1.0	1970	0.3	700	3.3	7300	2.8	5875	2.0	3905
27,	2.9	6150	2.3	4575	4.8	12850	4.1	10075	1.1	2155	6.2	19260	3.8	9000	0.9	1785	0.4	875	3.2	7000	2.8	5875	1.8	3490
28,	2.9	6150	2.6	5325	5.6	16375	3.8	9000	1.2	2340	5.1	14125	3.9	9350	0.6	1235	0.5	1055	3.0	6425	2.8	5875	1.5	2900
29,	2.5	5075	4.0	9700	7.1	23620	3.7	8650	1.2	2340	4.4	11225	5.0	13700	0.6	1235	0.6	1235	2.7	5600	3.3	7300	1.3	2525
30,	2.2	4325	----	----	10.8	43960	3.7	8650	1.0	1970	3.8	9000	5.8	17325	0.6	1235	1.3	2525	2.5	5075	4.0	9700	1.6	3095
31,	2.0	3905	-	------	13.9	68000	------	------	1.5	2900	------	------	6.8	22155	0.5	1055	---	---	2.5	5075	------	------	1.8	3490

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING, COUNTY, PA.

1897.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.9	3695	1.6	3095	4.0	9700	4.3	10830	2.6	5325	1.9	3695	1.0	1970	3.1	6710	0.7	1420	0.9	1785	0.4	875	4.4	11225
2,	2.0	3905	1.5	2900	3.5	7960	4.0	9700	3.9	9350	1.8	3490	1.0	1970	3.0	6425	0.7	1420	0.9	1785	1.0	1970	3.8	9000
3,	2.1	4115	1.5	2900	3.1	6710	3.7	8650	5.2	14550	1.8	3490	1.0	1970	2.5	5075	0.6	1235	0.8	1605	4.8	12850	3.4	7620
4,	2.1	4115	1.5	2900	5.1	14125	3.4	7620	8.8	32405	2.4	4825	0.9	1785	2.2	4325	0.6	1235	0.7	1420	4.1	10075	3.1	6710
5,	2.8	5875	1.5	2900	7.0	23125	3.2	7000	8.5	30800	2.3	4575	0.9	1785	2.1	4115	0.5	1055	0.6	1235	3.1	6710	4.0	9700
6,	3.9	9350	1.5	2900	7.4	25105	3.3	7300	7.9	27680	2.0	3905	0.	1420	2.0	3905	0.4	875	0.5	1055	2.7	5600	4.5	11620
7,	3.5	7960	3.7	8650	10.4	41500	3.6	8300	7.2	24115	1.7	3290	0.7	1420	2.4	4825	0.3	700	0.5	1055	2.3	4575	5.0	13700
8,	3.0	6425	4.1	10075	9.1	34035	3.8	9000	6.1	18780	1.6	3095	0.7	1420	2.2	4325	0.3	700	0.4	875	1.9	3695	4.7	12430
9,	3.0	6425	3.9	9350	7.6	26120	4.0	9700	5.5	15900	1.6	3095	0.7	1420	2.1	4115	0.2	525	0.3	700	1.8	3490	4.1	10075
10,	3.0	6425	3.7	8650	6.9	22640	8.0	28200	4.9	13275	1.8	3490	0.8	1605	1.7	3290	0.2	525	0.3	700	2.0	3905	3.8	9000
11,	3.0	6425	3.5	7960	7.8	27160	8.8	32405	4.6	12020	1.8	3490	0.8	1605	1.6	3095	0.15	440	0.3	700	2.1	4115	3.6	8300
12,	3.2	7000	3.6	8300	8.6	31335	7.8	27160	4.5	11620	1.7	3290	1.0	1970	2.0	3905	0.15	440	0.3	700	2.9	6150	3.8	9000
13,	2.9	6150	3.3	7300	8.8	32405	6.7	21670	4.4	11225	1.5	2900	0.9	1785	1.9	3695	0.15	440	0.4	875	2.6	5325	4.0	9700
14,	1.8	3490	3.0	6425	8.6	31335	5.9	17810	6.5	20700	1.4	2710	0.9	1785	1.7	3290	0.15	440	0.5	1055	2.4	4825	4.1	10075
15,	1.7	3290	2.7	5600	7.7	26640	5.6	16375	7.4	25105	1.3	2525	0.9	1785	1.5	2900	0.15	440	0.5	1055	2.2	4325	4.8	12850
16,	2.2	4325	2.7	5600	6.7	21670	6.6	21185	7.1	23620	1.2	2340	1.0	1970	1.3	2525	0.2	525	0.5	1055	2.1	4115	7.4	25105
17,	2.2	4325	2.7	5600	6.1	18780	7.8	27160	6.9	22640	1.1	2155	1.0	1970	1.1	2155	0.3	700	0.4	875	2.3	4575	7.7	26540
18,	2.2	4325	2.8	5875	5.1	14125	6.9	22640	5.4	15425	1.1	2155	1.1	2155	1.0	1970	0.4	875	0.3	700	4.9	13275	6.7	21670
19,	2.5	5075	3.6	8300	5.3	14985	6.1	18780	4.8	12850	1.1	2155	1.1	2155	0.8	1605	0.5	1055	0.3	7 00	4.5	11620	6.3	19740
20,	2.2	4325	3.6	8300	5.4	15425	5.4	15425	4.8	12850	1.3	2525	1.1	2155	1.0	1970	0.5	1055	0.3	700	3.8	9000	5.9	17810
21,	1.4	2710	3.7	8650	8.3	29760	4.9	13275	4.6	12020	1.5	2900	1.1	2155	1.1	2155	0.5	1055	0.4	875	3.4	7620	5.3	14985
22,	1.6	3095	3.9	9350	8.8	32405	4.4	11225	4.4	11225	1.2	2340	1.2	2340	1.0	1970	0.6	1235	0.5	1055	3.0	6425	4.9	13275
23,	2.0	3905	5.1	14125	8.5	30800	4.0	9700	3.8	9000	1.1	2155	1.2	2340	0.9	1785	0.7	1420	0.6	1235	2.7	5600	4.6	12020
24,	2.2	4325	8.8	32405	8.8	32405	3.7	8650	3.2	7000	1.1	2155	2.0	3965	3.5	7960	0.8	1605	0.7	1420	2.5	5075	3.8	9000
25,	2.4	4825	7.8	27160	11.3	47240	3.4	7620	3.0	6425	1.1	2155	2.3	4575	2.8	5875	2.4	4825	0.6	1235	2.3	4575	3.6	8300
26,	2.2	4325	6.3	19740	10.2	40300	3.1	6710	2.8	5875	1.2	2340	2.5	5075	2.2	4325	2.3	4575	0.6	1235	2.0	3905	3.3	7300
27,	2.3	4575	5.2	14550	8.4	30280	3.1	6710	2.7	5600	1.2	2340	2.0	3905	1.5	2900	2.2	4325	0.6	1235	2.5	5075	3.0	6425
28,	1.5	2900	4.3	10830	7.1	23620	3.0	6425	2.6	5325	1.2	2340	3.1	6710	1.2	2340	2.0	3905	0.5	1055	3.5	7960	3.1	6710
29,	1.8	3490	-----	-----	6.2	19260	2.9	6150	2.4	4825	1.2	2340	4.6	12020	1.0	1970	1.7	3290	0.5	1055	5.7	16850	2.4	4825
30,	1.9	3695	-----	-----	5.3	14985	2.7	5600	2.2	4325	1.0	1970	4.8	12850	0.8	1605	1.1	2155	0.4	875	5.0	13700	2.0	3905
31,	1.8	3490	-----	-----	4.7	12430	-----	-----	2.0	3905	-----	-----	3.8	9000	0.8	1605	-----	-----	0.4	875	-----	-----	2.2	4325

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

1898. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.0	3905	2.9	6150	3.5	7960	8.2	29240	4.6	12020	3.5	7960	2.0	3905	1.0	1970	1.1	2155	0.6	1235	3.3	7300	1.8	3490
2,	1.9	3695	2.6	5325	3.2	7000	6.9	22640	4.1	10075	3.1	6710	1.6	3095	0.9	1785	1.0	1970	0.5	1055	3.0	6425	1.9	3695
3,	1.7	3290	2.5	5075	3.2	7000	6.1	18780	4.0	9700	2.8	5875	1.4	2710	1.0	1970	0.9	1785	0.5	1055	2.7	5600	1.9	3695
4,	1.7	3290	2.1	4115	3.1	6710	5.3	14985	3.8	9000	2.5	5075	1.3	2525	1.3	2525	0.9	1785	0.5	1055	2.4	4825	2.1	4115
5,	1.8	3490	2.8	5875	3.0	6425	4.8	12850	3.4	7620	2.2	4325	1.1	2155	2.8	5875	0.8	1605	0.6	1235	2.2	4325	2.3	4575
6,	2.0	3905	2.9	6150	2.9	6150	4.4	11225	3.5	7960	2.0	3905	1.0	1970	2.9	6150	0.8	1605	1.1	2155	2.0	3905	2.6	5325
7,	2.1	4115	3.1	6710	2.8	5875	4.0	9700	3.8	9000	1.8	3490	0.9	1785	2.0	3905	0.7	1420	1.0	1970	2.0	3905	2.6	5325
8,	2.1	4115	3.0	6425	3.0	6425	3.7	8650	3.8	9000	1.8	3490	0.8	1605	1.5	2900	0.7	1420	1.3	2525	1.8	3490	2.5	5075
9,	2.1	4115	2.9	6150	3.1	6710	3.5	7960	3.9	9350	1.6	3095	0.8	1605	1.3	2525	0.9	1785	1.2	2340	1.8	3490	2.2	4325
10,	2.1	4115	2.9	6150	3.8	9000	3.3	7300	4.1	10075	1.4	2710	0.8	1605	1.2	2340	1.0	1970	1.2	2340	1.8	3490	2.0	3905
11,	2.5	5075	3.1	6710	4.7	12430	3.2	7000	3.7	8650	1.6	3095	0.7	1420	1.1	2155	0.8	1605	1.1	2155	4.8	12850	1.8	3490
12,	2.6	5325	3.8	9000	6.3	19740	3.0	6425	3.4	7620	1.8	3490	0.7	1420	1.0	1970	0.6	1235	1.1	2155	9.4	35715	1.6	3095
13,	2.9	6150	8.4	30280	9.0	33475	2.9	6150	3.2	7000	2.0	3905	0.7	1420	1.0	1970	0.7	1420	1.2	2340	7.3	24610	1.8	3490
14,	9.6	36840	8.0	28200	9.4	35715	2.7	5600	3.0	6425	2.5	5075	0.6	1235	1.7	3290	0.6	1235	1.3	2525	6.3	19740	1.6	3095
15,	8.7	31870	7.1	23620	9.4	35715	[illegible]	5600	3.0	6425	3.4	7620	0.6	1235	1.4	2710	0.6	1235	1.5	2900	5.3	14985	1.5	2900
16,	7.5	25600	6.3	19740	7.2	24115	3.5	7960	2.9	6150	3.1	6710	0.6	1235	1.2	2340	0.6	1235	1.4	2710	4.9	13275	1.4	2710
17,	8.2	29240	4.7	12430	6.2	19260	3.5	7960	3.0	6425	2.5	5075	0.5	1055	1.0	1970	0.5	1055	1.3	2525	4.1	10075	1.3	2525
18,	7.2	24115	4.6	12020	5.8	17325	3.5	7960	3.0	6425	2.0	3905	0.5	1055	1.0	1970	0.5	1055	1.2	2340	3.6	8300	1.4	2710
19,	6.1	18780	4.3	10830	5.4	15425	3.2	7000	4.0	9700	1.9	3695	0.5	1055	1.4	2710	0.4	875	1.3	2525	3.4	7620	1.5	2900
20,	5.3	14985	4.8	12850	9.0	33475	3.1	6710	3.9	9350	1.8	3490	0.5	1055	6.8	22155	0.5	1055	2.3	4575	3.2	7000	1.7	3290
21,	5.6	16375	5.3	14985	10.8	[illegible]	3.0	6425	5.1	14125	1.7	3290	0.7	1420	4.8	12850	0.4	875	2.7	5600	3.0	6425	2.0	3905
22,	6.2	19260	6.4	20220	10.2	40300	3.0	6425	4.8	12850	1.6	3095	0.8	1605	3.9	9350	0.5	1055	4.2	10450	2.8	5875	2.6	5325
23,	7.0	23125	6.0	18300	14.9	77170	2.9	6150	5.1	14125	1.6	3095	0.8	1605	3.0	6425	0.4	875	9.0	33475	2.7	5600	5.3	14985
24,	9.9	38535	5.3	14985	21.0	142375	4.0	9700	5.1	14125	1.4	2710	0.7	1420	2.5	5075	0.4	875	8.9	32940	2.6	5325	8.3	29760
25,	9.3	35155	5.0	13700	14.8	76240	7.7	26640	6.0	18300	1.3	2525	0.7	1420	2.1	4115	0.4	875	7.0	23125	2.4	4825	7.3	24610
26,	7.6	26120	4.6	12020	10.4	41500	8.7	31870	6.3	19740	1.2	2340	0.7	1420	2.1	4115	0.5	1055	5.0	13700	2.3	4575	6.3	19740
27,	6.8	22115	4.2	10450	9.6	36840	8.2	29240	5.6	16375	1.1	2155	1.9	3695	1.9	3695	0.5	1055	4.7	12430	2.1	4115	5.3	14985
28,	6.0	18300	3.8	9000	7.1	23620	6.4	20220	5.3	14985	1.0	1970	1.9	3695	1.8	3490	0.6	1235	5.0	13700	1.9	3695	4.7	12430
29,	5.3	14985	------	------	6.3	19740	5.7	16850	4.8	12850	2.1	4115	1.3	2525	1.7	3290	0.5	1055	4.7	12430	1.8	3490	4.3	10830
30,	4.7	12430	------	------	9.9	38535	5.1	14125	4.3	10830	2.7	5600	1.0	1970	1.6	3095	0.6	1235	4.2	10450	1.8	3490	4.1	10075
31,	4.1	10075	------	------	10.1	39700	------	------	3.9	9350	------	------	1.0	1970	1.5	2900	------	------	3.6	8300	------	------	3.9	9350

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

1899.	JAN.		FEB.		MAR.		APR.				JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.9	9350	3.0	6425	7.8	27160	6.8	22155	2.9	6150	2.4	4825	1.2	2340	0.4	875	1.4	2710	0.4	875	0.4	875	1.5	2900
2,	3.9	9350	2.8	5875	7.3	24610	6.4	20220	2.8	5875	2.4	4825	1.1	2155	0.3	700	1.5	2900	0.5	1055	3.8	9000	1.5	2900
3,	3.9	9350	2.6	5325	7.3	24610	6.0	18300	2.7	5600	2.3	4575	1.0	1970	0.3	700	1.5	2900	0.5	1055	3.8	9000	1.6	3095
4,	3.8	9000	2.5	5075	7.8	27160	5.3	14985	2.7	5600	2.2	4325	0.9	1785	0.15	440	1.5	2900	0.4	875	3.8	9000	1.6	3095
5,	4.8	12850	2.6	5325	11.8	50820	4.5	11620	2.9	6150	2.1	4115	0.8	1605	0.2	525	1.5	2900	0.4	875	3.4	7620	1.9	3695
6,	7.0	23125	2.8	5875	13.1	61040	4.3	10830	2.5	5075	1.9	3695	0.7	1420	0.15	440	1.4	2710	0.4	875	2.9	6150	1.6	3095
7,	8.0	28200	2.8	5875	11.3	47240	4.3	10830	2.3	4575	1.7	3290	0.7	1420	0.15	440	1.3	2525	0.4	875	2.4	4825	1.5	2900
8,	6.3	19740	2.9	6150	9.1	34035	6.8	22155	2.2	4325	1.5	2900	0.7	1420	0.15	440	1.3	2525	0.4	875	2.1	4115	1.7	3290
9,	5.3	14985	2.9	6150	7.3	24610	7.8	27160	2.3	4575	1.3	2525	0.6	1235	0.15	440	1.2	2340	0.4	875	1.9	3695	1.6	3095
10,	4.3	10830	2.8	5875	6.3	19740	7.8	27160	2.4	4825	1.3	2525	0.6	1235	0.15	440	1.2	2340	0.4	875	2.0	3905	1.7	3290
11,	4.0	9700	2.7	5600	5.4	15495	6.8	22155	2.4	4825	1.2	2340	0.6	1235	0.2	525	1.1	2155	0.4	875	2.1	4115	1.7	3290
12,	3.9	9350	2.6	5325	6.3	19740	6.3	19740	2.7	5600	1.2	2340	0.6	1235	0.2	525	1.0	1970	0.4	875	2.2	4325	1.9	3695
13,	3.8	9000	2.4	4825	7.3	24610	6.8	22155	2.5	5075	1.1	2155	0.6	1235	0.8	1605	0.9	1785	0.4	875	2.3	4575	7.0	23125
14,	4.3	10830	2.3	4575	7.8	27160	7.3	24610	2.4	4825	1.0	1970	0.6	1235	0.6	1235	0.8	1605	0.3	700	2.6	5325	7.5	25600
15,	4.8	12850	2.3	4575	7.7	23620	7.3	24610	2.3	4575	1.0	1970	0.6	1235	0.4	875	0.7	1420	0.3	700	2.9	6150	6.3	19740
16,	5.3	14985	2.4	4825	6.1	18780	6.8	22155	2.2	4325	1.0	1970	0.6	1235	0.2	525	0.7	1420	0.3	700	3.1	6710	5.5	15900
17,	5.8	17325	2.5	5075	5.8	17325	6.3	19740	2.0	3905	0.9	1785	0.6	1235	0.3	700	0.6	1235	0.3	700	3.2	7000	4.7	12430
18,	5.8	17325	2.6	5325	5.8	17325	5.1	14125	2.7	5600	0.9	1785	0.8	1605	0.3	700	0.5	1055	0.3	700	3.6	8300	4.0	9700
19,	5.6	16375	2.8	5875	7.5	25600	4.9	13275	6.8	22155	0.8	1605	1.1	2155	0.2	525	0.5	1055	0.3	700	3.5	7960	3.9	9350
20,	4.5	11620	3.2	7000	9.3	35155	4.6	12020	7.3	24610	0.8	1605	1.4	2710	0.15	440	0.4	875	0.3	700	3.5	7960	3.8	9000
21,	3.9	9350	3.3	7300	8.8	32405	4.4	11225	6.1	18780	0.7	1420	1.7	3290	0.15	440	0.4	875	0.3	700	3.2	7000	4.3	10830
22,	3.9	9350	4.2	10450	7.6	26120	4.2	10450	4.9	13275	0.5	1055	1.2	2340	0.2	525	0.3	700	0.3	700	2.9	6150	4.9	13275
23,	3.8	9000	5.3	14985	6.8	22155	4.0	9700	4.1	10075	0.6	1235	1.0	1970	0.15	440	0.3	700	0.3	700	2.6	5325	4.3	10830
24,	3.8	9000	6.8	22155	7.0	23125	3.7	8650	3.6	8300	0.5	1055	0.8	1605	0.15	440	0.4	875	0.3	700	2.4	4825	4.5	11620
25,	4.0	9700	7.3	24610	5.8	17325	3.5	7960	3.1	6710	1.3	2525	0.7	1420	0.15	440	0.3	700	0.3	700	2.3	4575	4.8	12850
26,	4.2	10450	6.3	19740	5.8	17325	3.3	7300	2.9	6150	1.0	1970	0.6	1235	0.2	525	0.3	700	0.2	525	2.2	4325	5.0	13700
27,	3.6	8300	5.3	14985	5.8	17325	3.7	8650	2.7	5600	1.3	2525	0.6	1235	1.4	2710	0.3	700	0.2	525	2.1	4115	4.5	11620
28,	3.5	7960	8.3	29760	5.6	16375	3.6	8300	2.5	5075	1.2	2340	0.4	875	2.5	5075	0.3	700	0.2	525	1.9	3695	4.3	10830
29,	3.4	7620	-----	-----	6.5	20700	3.3	7300	2.4	4825	1.3	2525	0.3	700	2.0	3905	0.4	875	0.2	525	1.9	3695	3.8	9000
30,	3.2	7000	-----	-----	8.3	29760	3.1	6710	2.4	4825	1.3	2525	0.4	875	1.7	3290	0.4	875	0.15	440	1.7	3290	3.7	8650
31,	3.0	6425	-----	-----	7.8	27160	-----	-----	2.5	5075	-----	-----	0.4	875	1.5	2900	-----	-----	0.15	440	-----	-----	3.5	7960

Note.—Low water gage heights unreliable. Have been raised in getting averages.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

1900.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.3	7300	2.9	6150	4.0	9700	3.9	9350	3.3	7300	3.3	7300	1.3	2525	0.6	1235	0.8	1605	0.15	440	1.0	1970	5.8	17325
2,	3.2	7000	2.8	5875	a9.0	39100	3.8	9000	3.1	6710	2.9	6150	1.5	2900	0.6	1235	0.7	1420	0.16	457	1.0	1970	5.0	13700
3,	3.1	6710	2.8	5875	8.2	29240	4.2	10450	2.9	6150	3.2	7000	1.3	2525	0.6	1235	0.6	1235	0.16	457	0.9	1785	4.8	12850
4,	3.0	6425	2.9	6150	7.1	23620	4.5	11620	2.7	5600	3.5	7960	1.0	1970	0.5	1055	0.5	1055	0.2	525	0.9	1785	4.3	10830
5,	2.9	6150	2.9	6150	6.0	18300	4.8	12850	2.6	5325	3.5	7960	0.9	1785	0.5	1055	0.5	1055	0.2	525	0.9	1785	6.8	22155
6,	2.8	5875	3.3	7300	5.2	14550	4.5	11620	2.5	5075	3.0	6425	1.0	1970	0.4	875	0.4	875	0.2	525	0.9	1785	7.2	24115
7,	2.6	5325	3.0	6425	5.3	14985	5.0	13700	2.3	4575	2.7	5600	1.1	2155	0.4	875	0.3	700	0.2	525	0.8	1605	5.8	17325
8,	2.5	5075	3.0	6425	7.1	23620	6.5	20700	2.2	4325	2.5	5075	1.1	2155	0.3	700	0.3	700	0.3	700	0.8	1605	5.7	16850
9,	2.6	5325	4.5	11620	6.5	20700	6.8	22155	2.0	3905	2.4	4825	1.0	1970	0.3	700	0.3	700	0.4	875	0.8	1605	4.8	12850
10,	2.6	5325	6.0	18300	6.2	19260	6.1	18780	2.0	3905	2.2	4325	0.9	1785	0.2	525	0.3	700	0.9	1785	0.8	1605	4.5	11620
11,	2.6	5325	5.5	15900	7.0	23125	5.5	15900	2.0	3905	2.0	3905	1.0	1970	0.2	525	0.3	700	1.1	2155	0.8	1605	4.2	10450
12,	2.7	5600	5.0	13700	6.3	19740	4.8	12850	2.0	3905	1.9	3695	1.1	2155	0.15	440	0.2	525	1.0	1970	0.9	1785	3.5	7900
13,	2.8	5875	5.0	13700	5.1	14125	4.5	11620	2.0	3905	1.8	3490	1.0	1970	0.15	440	0.2	525	1.0	1970	0.9	1785	3.0	6425
14,	2.9	6150	8.7	31870	4.5	11620	4.3	10830	2.0	3905	1.6	3095	1.7	3290	0.2	525	0.2	525	1.0	1970	0.9	1785	2.9	6150
15,	3.0	6425	8.5	30800	4.1	10075	4.1	10075	2.3	4575	1.7	3290	1.3	2525	0.15	440	0.2	525	0.9	1785	0.9	1785	2.8	5875
16,	3.0	6425	6.5	20700	3.5	7960	3.9	9350	2.3	4575	1.9	3695	1.1	2155	0.15	440	0.15	440	1.1	2155	0.8	1605	2.3	4575
17,	3.0	6425	5.5	15900	2.8	5875	3.9	9350	2.0	3905	1.7	3290	0.9	1785	0.2	525	0.15	440	1.2	2340	0.8	1605	1.9	3695
18,	3.3	7300	4.7	12430	2.7	5600	5.1	14125	2.0	3905	1.6	3095	0.8	1605	0.2	525	0.2	525	1.1	2155	0.7	1420	1.8	3490
19,	3.8	9000	3.8	9000	2.5	5075	6.9	22640	2.0	3905	1.5	2900	0.8	1605	0.2	525	0.2	525	0.9	1785	0.7	1420	2.1	4115
20,	4.5	11620	3.6	8300	3.1	6710	6.8	22155	2.5	5075	1.4	2710	0.7	1420	0.2	525	0.2	525	0.8	1605	0.7	1420	2.0	3905
21,	13.0	60200	3.5	7960	7.0	23125	6.2	19260	2.5	5075	1.3	2525	0.7	1420	0.3	700	0.2	525	0.7	1420	0.8	1605	2.0	3905
22,	13.0	60200	5.5	15900	6.1	18780	5.5	15900	2.3	4575	1.2	2340	0.6	1235	0.7	1420	0.2	525	0.7	1420	1.0	1970	1.9	3695
23,	10.0	39100	9.8	37970	5.0	13700	5.5	15900	2.0	3905	1.2	2340	0.6	1235	1.0	1970	0.16	457	0.7	1420	1.4	2710	1.9	3695
24,	8.0	28200	7.4	25105	5.5	15900	5.9	17810	1.8	3490	1.1	2155	0.6	1235	0.9	1785	0.16	457	0.7	1420	1.5	2900	1.8	3490
25,	6.5	20700	5.4	15425	6.0	18300	5.7	16850	1.7	3290	1.0	1970	0.6	1235	0.9	1785	0.15	440	0.9	1785	2.7	5600	1.9	3695
26,	5.8	17325	5.2	14550	5.2	14550	5.2	14550	1.8	3490	1.1	2155	0.5	1055	0.9	1785	0.15	440	1.8	3490	4.8	12850	2.1	4115
27,	5.0	13700	3.2	7000	4.9	13275	4.7	12430	2.0	3905	1.0	1970	0.7	1420	1.0	1970	0.14	423	1.5	2900	17.0	98000	2.4	4825
28,	4.5	11620	3.9	9350	4.5	11620	4.2	10450	1.9	3695	0.9	1785	1.0	1970	0.9	1785	0.14	423	1.4	2710	12.0	52300	2.3	4575
29,	4.0	9700			4.5	11620	3.8	9000	1.9	3695	0.8	1605	0.9	1785	1.0	1970	0.15	440	1.3	2525	8.0	28200	2.3	4575
30,	4.1	10075			4.4	11225	3.6	8300	4.0	9700	0.8	1605	0.8	1605	1.0	1970	0.15	440	1.1	2155	5.5	15900	2.3	4575
31,	3.3	7300			4.1	10075			3.6	8300			0.7	1420	0.9	1785			1.1	2155			2.2	4325

a Reached 11.0 during day.
Note.—Low water gage heights unreliable. Have been raised in getting average monthly discharge.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

1901. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.3	4575	1.6	3095	0.9	1785	5.5	15900	4.0	9700	9.8	37970	3.1	6710	1.2	2340	3.0	6425	1.8	3490	0.7	1420	3.0	6425
2,	2.3	4575	1.4	2710	1.0	1970	4.8	12850	3.8	9000	7.2	24115	2.6	5325	1.1	2155	3.5	7960	1.5	2900	0.6	1235	2.8	5875
3,	1.9	3695	1.4	2710	1.3	2525	4.5	11620	4.0	9700	7.0	23125	2.3	4575	1.0	1970	6.8	22155	2.0	3905	0.6	1235	3.0	6425
4	1.1	2155	1.4	2710	1.4	2710	6.0	18300	4.6	12020	6.5	20700	2.2	4325	0.8	1605	5.7	16850	1.5	2900	0.7	1420	2.6	5325
5,	1.0	1970	1.6	3095	2.1	4125	6.2	19260	4.2	10450	5.7	16850	2.1	4115	0.7	1420	4.6	12020	1.4	2710	0.6	1235	2.3	4575
6,	1.0	1970	1.8	3490	3.0	6425	7.0	23125	4.0	9700	5.1	14125	2.0	3905	0.7	1420	4.1	10075	1.3	2525	0.6	1235	2.0	3905
7,	1.1	2155	2.5	5075	3.7	8650	9.5	36275	3.7	8650	5.0	13700	1.9	3695	0.8	1605	3.3	7300	1.2	2340	0.6	1235	1.8	3490
8,	1.1	2155	1.9	3695	3.0	6425	11.5	48600	3.5	7960	5.5	15900	1.8	3490	1.8	3490	2.7	5600	0.9	1785	0.6	1235	1.8	3490
9,	1.4	2710	1.4	2710	2.6	5325	11.2	46560	3.1	6710	5.3	14985	1.6	3095	1.9	3695	2.4	4825	0.8	1605	0.5	1055	1.8	3490
10,	1.5	2900	1.3	2525	3.0	6425	9.5	36275	3.3	7300	5.0	13700	1.5	2900	1.7	3290	2.2	4325	0.9	1785	0.5	1055	2.8	5875
11,	1.8	3490	1.3	2525	7.0	23125	8.2	29240	3.4	7620	4.5	11620	1.4	2710	1.5	2900	2.0	3905	0.9	1785	0.4	875	6.9	22640
12,	2.1	4115	1.9	3695	10.5	42100	7.2	24115	3.4	7620	4.1	10075	1.3	2525	1.4	2710	[illegible]	[illegible]	0.9	1785	0.5	1055	6.1	18780
13,	3.6	8300	2.4	4825	9.2	34500	6.2	19260	3.4	7620	3.9	9350	1.1	2155	1.1	2155	[illegible]	[illegible]	1.0	1970	0.6	1235	5.5	15900
14,	4.5	11620	2.1	4125	7.5	25600	5.8	17325	3.6	8300	3.3	7300	1.1	2155	0.9	1785	2.3	4575	1.3	2525	0.6	1235	5.2	14550
15,	4.2	10450	1.5	2900	6.5	20700	5.5	15900	3.6	8300	3.0	6425	1.1	2155	0.8	1605	2.5	5075	1.1	2155	1.5	2900	20.17	132672
16,	4.0	9700	1.4	2710	6.8	22155	5.3	14985	3.5	7960	2.9	6150	1.2	2340	3.3	7300	2.8	5875	0.8	1605	1.2	2340	18.2	110560
17,	3.7	8650	1.3	2525	6.0	18300	4.8	12850	3.3	7300	3.4	7620	1.0	1970	3.3	7300	2.7	5600	1.1	2155	1.3	2525	12.0	52300
18,	3.5	7960	1.2	2340	5.5	15900	4.2	10450	3.5	7960	2.9	6150	1.2	2340	3.3	7300	3.0	6425	1.0	1970	1.5	2900	8.8	22405
19	2.9	6150	1.2	2340	5.0	13700	4.2	10450	3.4	7620	2.7	5600	1.2	2340	4.5	11620	3.0	6425	0.9	1785	1.3	2525	7.0	23125
20	2.4	4825	1.3	2525	6.2	19260	4.0	9700	3.2	7000	2.6	5325	1.1	2155	4.2	10450	2.8	5875	0.8	1605	1.1	2155	5.5	15900
21,	2.0	3905	1.4	2710	7.5	25600	12.0	52300	3.0	6425	2.9	6150	1.0	1970	4.0	9700	2.5	5075	0.8	1605	1.0	1970	5.0	13700
22,	1.9	3695	1.3	2525	9.5	36275	15.2	80020	1.8	3490	4.0	9700	0.9	1785	4.6	12020	2.3	4575	0.7	1420	0.9	1785	4.4	11225
23,	2.2	4325	1.2	2340	8.5	30800	12.5	56200	5.8	17325	4.5	11620	0.7	1420	4.0	9700	2.0	3905	0.6	1235	0.8	1605	3.7	8650
24,	2.6	5325	1.0	1970	7.5	25600	9.7	37405	5.5	15900	4.4	11225	0.7	1420	5.4	15425	1.9	3695	0.6	1235	1.6	3095	3.6	8300
25,	2.4	4825	0.9	1785	6.5	20700	8.5	30800	5.5	15900	4.2	10450	0.7	1420	7.8	27160	1.8	3490	0.6	1235	5.6	16375	3.6	8300
26,	2.5	5075	0.9	1785	7.8	27160	7.5	25600	5.0	13700	3.8	9000	0.8	1605	6.8	22155	1.5	2900	0.6	1235	6.7	21670	3.7	8650
27,	2.6	5325	1.0	1970	10.5	42100	6.5	20700	5.0	13700	3.5	7960	0.9	1785	5.2	14550	1.4	2710	0.6	1235	5.7	16850	2.9	9350
28,	2.6	5325	1.0	1970	11.2	46560	5.5	15900	7.6	26120	3.6	8300	1.0	1970	4.3	10830	1.2	2340	0.6	1235	4.4	11225	3.4	7620
29,	2.7	5600	------	------	9.2	34590	5.0	13700	11.5	48600	3.7	8650	1.1	2155	3.5	7960	1.5	2900	0.7	1420	3.6	8300	3.2	7000
30,	2.6	5325	------	------	7.8	27160	4.5	11620	14.0	68900	3.5	7900	1.2	2340	3.0	6425	1.9	3695	0.8	1605	3.5	7960	3.0	6425
31,	1.7	3290	------	------	6.2	19260	------	------	12.3	54640	------	------	1.2	2340	2.7	5600	------	------	0.7	1420	------	------	3.4	7620

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

1902. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.2	7000	4.3	10830	20.38	135108	6.0	18300	2.5	5075	1.3	2525	8.3	29760	5.0	13700	0.5	1055	2.7	5600	1.9	3695	1.0	1970
2	2.9	6150	4.2	10450	21.10	143550	5.7	16850	2.5	5075	1.2	2340	7.4	25105	4.9	13275	0.6	1235	4.1	10075	1.7	3290	1.3	2525
3.	2.6	5325	5.0	13700	16.45	92400	5.3	14985	2.4	4825	1.2	2340	6.4	20220	4.6	12020	0.5	1055	3.1	6710	1.6	3095	1.5	2900
4,	2.5	5075	4.7	12430	13.00	60200	4.9	13275	2.7	5600	1.1	2155	9.7	37405	4.3	10830	0.5	1055	2.5	5075	1.5	2900	2.2	4325
5,	2.4	4825	4.5	11620	10.0	39100	4.5	11620	2.7	5600	1.1	2155	10.8	43960	3.8	9000	0.5	1055	2.4	4825	1.4	2710	2.4	4825
6,	2.3	4575	4.0	9700	8.1	28720	4.3	10830	2.9	6150	1.3	2525	8.6	31335	3.3	7300	0.4	875	2.3	4575	1.4	2710	2.5	5075
7,	2.3	4575	3.9	9350	6.8	22155	4.5	11620	2.9	6150	1.2	2340	8.8	32405	3.1	6710	0.4	875	2.2	4325	1.3	2525	2.3	4575
8,	2.3	4575	3.7	8650	5.9	17810	4.7	12430	3.2	7000	1.2	2340	7.3	24610	3.0	6425	0.4	875	2.2	4325	1.4	2710	2.3	4575
9.	2.4	4825	3.6	8300	5.3	14985	13.3	62720	3.4	7620	1.1	2155	6.3	19740	2.8	5875	0.4	875	2.0	3905	1.4	2710	2.8	5875
10,	2.4	4825	3.4	7620	5.5	15900	16.6	93920	3.2	7000	1.0	1970	6.0	18300	2.6	5325	0.6	1235	1.8	3490	1.3	2525	1.9	3695
11,	2.4	4825	3.3	7300	6.3	19740	12.9	59400	3.0	6425	1.1	2155	7.7	26640	2.4	4825	0.5	1055	1.6	3095	1.3	2525	2.0	3905
12,	2.4	4825	3.0	6425	7.1	23620	10.3	40900	2.8	5875	1.1	2155	7.2	24115	2.2	4325	0.5	1055	1.4	2710	1.2	2340	2.3	4575
13,	2.4	4825	2.9	6150	9.6	36840	8.4	30280	2.6	5325	1.3	2525	6.3	19740	2.5	5075	0.6	1235	1.2	2340	1.2	2310	3.1	6710
14,	2.3	4575	3.0	6425	12.2	53860	7.3	24610	2.5	5075	1.4	2710	5.0	13700	2.1	4115	0.5	1055	1.0	1970	1.1	2155	4.4	11225
15,	2.1	4115	2.6	5325	10.8	43960	6.3	19740	2.4	4825	1.6	3095	4.2	10450	1.9	3695	0.4	875	1.2	2340	1.0	1970	3.6	8300
16,	2.1	4115	2.3	4575	8.4	30280	5.5	15900	2.2	4325	1.8	3490	3.6	8300	1.8	3490	0.4	875	1.3	2525	1.0	1970	3.0	6425
17.	2.0	3905	2.1	4115	13.8	67100	5.0	13700	2.0	3905	1.9	3695	3.1	6710	1.6	3095	0.4	875	1.6	3095	0.9	1785	5.8	17325
18,	2.0	3905	2.1	4115	12.7	57800	4.7	12430	1.9	3695	2.0	3905	3.3	7300	1.5	2900	0.4	875	1.5	2900	0.9	1785	8.1	28720
19,	1.8	3490	2.5	5075	10.0	39100	4.3	10830	1.8	3490	2.0	3905	3.7	8650	1.4	2710	0.3	700	1.4	2710	0.9	1785	6.4	20220
20,	1.6	3095	2.2	4325	8.1	28720	3.9	9350	1.7	3290	1.8	3490	4.4	11225	1.3	2525	0.2	525	1.3	2525	0.8	1605	5.3	14985
21,	2.0	3905	1.9	3695	6.8	22155	4.4	11225	1.7	3290	1.8	3490	5.8	17325	1.2	2340	0.2	525	1.3	2525	0.9	1785	5.1	14125
22,	5.3	14985	2.2	4325	6.0	18300	3.5	7960	1.7	3290	1.7	3290	6.8	22155	1.4	2710	0.2	525	1.2	2340	0.9	1785	8.0	28200
23,	6.73	21815	1.9	3695	5.4	15425	3.2	7000	1.6	3095	1.5	2900	6.3	19740	1.3	2525	0.2	525	1.1	2155	0.9	1785	10.7	43340
24,	4.5	11620	1.8	3490	5.0	13700	2.9	6150	1.6	3095	1.4	2710	5.7	16850	1.1	2155	0.2	525	1.0	1970	0.9	1785	9.1	34035
25	4.5	11620	1.3	3490	4.5	11620	2.8	5875	1.6	3095	*0.6	2525	5.9	17810	1.0	1970	0.5	1055	1.0	1970	1.0	1970	7.2	24115
26,	4.0	9700	2.0	3905	4.2	10450	3.3	7300	1.6	3095	1.5	2900	5.8	17325	0.9	1785	0.9	1785	0.9	1785	1.1	2155	6.0	18300
27,	4.1	10075	3.1	6710	3.9	9350	2.5	5075	1.7	3290	1.9	3695	6.1	18780	0.8	1605	2.3	4575	0.9	1785	1.1	2155	5.4	15425
28,	4.0	9700	10.89	44518	3.7	8650	2.4	4825	1.8	3490	2.8	5875	5.5	15900	0.4	875	2.6	5325	1.3	2525	1.1	2155	4.1	10075
29,	3.9	9350			3.9	9350	2.3	4575	1.6	3095	2.6	5325	5.2	14550	0.5	1055	2.8	5875	1.2	2340	1.0	1970	4.4	11225
30	4.1	10075			5.6	16375	2.5	5075	1.5	2900	4.3	10830	4.5	11620	0.6	1235	2.3	4575	1.5	2900	1.0	1970	3.6	8300
31	4.0	9700			6.2	19260			1.4	2710			5.2	14550	0.5	1055			1.7	3290			2.5	5075

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

1903. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.0	6425	9.8	37970	17.07	98728	5.8	17325	2.4	4825	1.0	1970	4.6	12020	2.7	5600	5.8	17325	1.0	1970	1.9	3695	2.0	3905
2,	2.5	5075	6.0	18300	14.3	71630	5.6	16375	2.3	4575	0.5	1055	4.2	10450	2.3	4575	5.3	14985	1.0	1970	1.7	3290	2.0	3905
3,	3.0	6425	7.5	25600	10.2	40300	5.3	14985	2.2	4325	0.9	1785	4.0	9700	2.0	3905	4.6	12020	0.9	1785	1.7	3290	2.0	3905
4,	4.3	10830	*10.6	62720	8.3	29760	5.0	13700	2.0	3905	0.6	1235	4.4	11225	1.8	3490	4.0	9700	0.9	1785	1.6	3095	1.8	3490
5,	4.9	13275	15.5	82900	7.2	24115	5.1	14125	2.0	3905	0.6	1235	4.0	9700	2.5	5075	3.5	7960	1.0	1970	1.5	2900	1.8	3490
6,	5.3	14985	13.2	61880	7.1	23620	4.7	12430	2.0	3905	0.6	1235	3.7	8650	3.6	8300	3.1	6710	1.4	2710	1.6	3095	1.8	3490
7,	5.0	13700	10.1	39700	7.2	24115	4.5	11620	2.0	3905	0.7	1420	6.0	18300	3.8	9000	2.7	5600	1.7	3290	1.5	2900	1.7	3290
8,	4.4	11225	7.8	27160	7.6	26120	4.5	11620	1.7	3290	1.0	1970	5.3	14985	4.0	9700	2.5	5075	2.0	3905	1.5	2900	1.7	3290
9,	3.7	8650	6.7	21670	‡12.2	57800	5.0	13700	1.6	3095	1.4	2710	4.2	10450	3.5	7960	2.4	4825	5.9	17810	1.5	2900	1.6	3095
10,	2.2	4325	5.8	17325	12.7	57800	5.4	15425	1.4	2710	1.4	2710	3.5	7960	2.9	6150	2.6	5325	7.8	27160	1.4	2710	1.7	3290
11,	2.2	4325	5.1	14125	11.0	45200	5.6	16375	1.4	2710	2.1	4115	3.0	6425	2.6	5325	2.8	5875	6.2	19260	1.4	2710	1.7	3290
12,	4.3	10830	5.2	14550	11.1	45880	5.3	14985	1.4	2710	2.2	4325	3.0	6425	2.4	4825	3.4	7620	5.5	15900	1.4	2710	1.4	2710
13,	4.2	10450	6.2	19260	10.6	42720	5.8	17325	1.3	2525	3.7	8650	3.0	6425	2.2	4325	3.0	6425	4.6	12020	1.3	2525	1.3	2525
14,	4.2	10450	6.7	21670	8.9	32940	6.1	18780	1.3	2525	3.4	7620	2.7	5600	2.0	3905	2.5	5075	4.0	9700	1.2	2340	1.9	3695
15,	4.2	10450	6.4	20220	7.8	27160	9.6	36840	1.3	2525	3.6	8300	2.4	4825	1.7	3290	2.3	4575	3.6	8300	1.2	2340	1.5	2900
16,	4.2	10450	6.3	19740	6.9	22640	11.7	50080	1.2	2340	4.0	9700	2.2	4325	1.6	3095	2.0	3905	3.3	7300	1.3	2525	1.0	1970
17.	4.1	10075	6.3	19740	6.2	19260	10.7	43340	1.2	2340	3.7	8650	2.0	3905	1.8	3490	1.9	3695	3.0	6425	2.8	5875	1.0	1970
18,	3.7	8650	6.0	18300	5.7	16850	9.1	34035	1.2	2340	3.4	7620	2.0	3905	1.8	3490	2.5	5075	4.2	10450	12.0	52300	1.0	1970
19,	3.7	8650	4.4	11225	5.3	14985	7.6	26120	1.2	2340	2.9	6150	5.4	15425	1.6	3095	2.6	5325	5.3	14985	9.2	34596	1.0	1970
20,	3.6	8300	4.0	9700	4.7	12430	6.5	20700	1.2	2340	2.6	5325	8.0	28200	1.5	2900	2.5	5075	5.0	13700	7.4	25105	1.0	1970
21,	3.7	8650	4.1	10075	4.4	11225	5.7	16850	1.2	2340	2.5	5075	6.2	19260	1.6	3095	2.3	4575	4.6	12020	5.5	15900	1.6	3095
22,	3.4	7620	4.0	9700	4.6	12020	5.1	14125	1.1	2155	2.5	5075	5.5	15900	2.2	4325	2.0	3905	4.0	9700	4.9	13275	2.1	4115
23,	3.2	7000	4.5	11620	5.3	14985	4.6	12020	1.1	2155	2.6	5325	5.0	13700	1.8	3490	1.8	3490	3.6	8300	4.4	11225	2.0	3905
24,	3.1	6710	3.8	9000	13.3	62720	4.2	10450	1.0	1970	4.1	10075	4.2	10450	1.5	2900	1.6	3095	3.2	7000	4.1	10075	1.9	3695
25,	3.1	6710	3.9	9350	12.2	53800	4.0	9700	0.9	1785	6.1	18780	3.6	8300	1.5	2900	1.5	2900	3.0	6425	3.8	9000	1.8	3490
26,	3.0	6425	3.8	9000	9.5	36275	3.5	7960	0.9	1785	9.2	34590	3.2	7000	1.4	2710	1.5	2900	2.8	5875	3.4	7620	1.7	3290
27,	3.0	6425	3.6	8300	7.7	26640	3.4	7620	1.0	1970	7.0	23125	2.7	5600	1.5	2900	1.3	2525	2.6	5325	3.0	6425	2.0	3905
28,	3.0	6425	†9.85	55420	6.5	20700	3.1	6710	1.0	1970	5.4	15425	2.3	4575	1.8	3490	1.2	2340	2.3	4575	2.5	5075	2.0	3905
29,	2.8	5875	------	------	5.6	16375	2.9	6150	1.1	2155	4.5	11620	2.1	4115	3.9	9350	1.2	2340	2.2	4325	2.1	4115	2.4	4825
30	3.0	6425	------	------	5.0	13700	2.7	5600	1.1	2155	5.2	14550	2.5	5075	7.2	24115	1.1	2155	2.0	3905	1.7	3290	2.3	4575
31,	11.0	45200	------	------	4.9	13275	------	------	1.1	2155	------	------	2.8	5875	6.5	20700	------	------	2.0	3905	------	------	2.4	4825

† 13.2 at 11.00 P. M.
* 16.0 at 11.00 P. M.
‡ 15.0 at 12.00 P. M.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

1904.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.2	4325	3.8	9000	2.7	5600	6.2	19260	7.8	27160	3.6	8300	2.3	4575	1.0	1970	0.4	875	0.8	1605	1.0	1970	0.6	1235
2,	2.2	4325	3.4	7620	7.0	23125	16.8	95960	7.0	23125	3.7	8650	2.1	4115	0.9	1785	0.4	875	1.0	1970	1.0	1970	0.5	1055
3,	2.0	3905	3.0	6425	7.5	25600	13.6	65300	6.2	19260	3.7	8650	1.9	3695	0.9	1785	0.4	875	1.0	1970	1.0	1970	0.5	1055
4,	2.0	3905	2.8	5875	19.0	119400	9.8	37970	5.5	15900	3.5	7960	1.7	3290	0.9	1785	0.3	700	0.9	1785	1.0	1970	0.4	875
5,	1.8	3490	3.0	6425	16.5	92900	8.0	28200	5.0	13700	6.1	18780	1.5	2900	0.8	1605	0.3	700	0.8	1605	0.9	1785	§0.4	875
6,	1.8	3490	2.4	4825	9.2	34590	6.8	22155	4.5	11620	4.5	11620	1.5	2900	0.7	1420	0.3	700	0.8	1605	0.9	1785	0.4	875
7,	1.7	3290	2.6	5325	7.4	25105	6.4	20220	4.2	10450	3.7	8650	1.7	3290	0.7	1420	0.2	525	0.7	1420	0.8	1605	0.4	875
8,	1.7	3290	*5.0	13700	17.4	102160	6.0	18300	3.9	9350	3.4	7620	1.8	3490	0.7	1420	0.2	525	0.7	1420	0.7	1420	0.4	875
9,	1.7	3290	†10.5	42100	13.5	64400	6.0	18300	3.6	8300	3.2	7000	3.4	7620	0.6	1235	0.2	525	0.6	1235	0.6	1235	0.4	875
10,	1.7	3290	†7.6	26120	9.8	37970	8.8	32405	3.3	7300	3.2	7000	4.4	11225	0.5	1055	0.2	525	0.6	1235	0.6	1235	0.4	875
11,	1.7	3290	†6.0	18300	7.6	26120	9.2	34590	3.2	7000	3.3	7300	8.1	28720	0.5	1055	0.2	525	0.6	1235	0.7	1420	0.4	875
12,	1.7	3290	†5.2	14550	6.5	20700	7.9	27680	3.0	6425	3.3	7300	6.7	21670	0.4	875	0.5	1055	0.5	1055	0.7	1420	0.4	875
13,	1.7	3290	†4.3	10830	5.8	17325	7.2	24115	2.8	5875	2.9	6150	5.4	15425	0.4	875	0.6	1235	0.7	1420	0.7	1420	0.3	700
14	1.7	3290	3.8	9000	5.3	14985	6.6	21185	2.5	5075	2.7	5600	4.6	12020	0.5	1055	0.5	1055	1.2	2340	0.8	1605	0.3	700
15,	1.6	3095	4.0	9700	5.0	13700	5.8	17325	3.0	6425	2.4	4825	3.8	9000	0.5	1055	0.5	1055	1.5	2900	0.8	1605	0.3	700
16,	1.6	3095	‡3.8	9000	4.4	11225	5.2	14550	3.4	7620	2.6	5325	3.4	7620	0.5	1055	0.6	1235	1.4	2710	0.7	1420	0.3	700
17,	1.5	2900	‡3.6	8300	4.1	10075	5.2	14550	3.3	7300	3.1	6710	3.0	6425	0.3	700	0.5	1055	1.3	2525	0.7	1420	0.3	700
18,	1.5	2900	‡3.5	7960	3.8	9000	5.1	14125	3.2	7000	2.8	5875	2.5	5075	0.3	700	0.5	1055	1.2	2340	0.7	1420	0.2	525
19,	1.5	2900	3.3	7300	4.0	9700	5.0	13700	4.7	12430	2.6	5325	2.1	4115	0.3	700	0.4	875	1.1	2155	0.7	1420	0.2	525
20,	1.5	2900	‡3.0	6425	4.5	11620	4.5	11620	7.7	26640	2.3	4575	2.0	3905	0.4	875	0.3	700	1.0	1970	0.7	1420	0.2	525
21,	1.4	2710	2.9	6150	6.5	20700	4.2	10450	7.2	24115	2.3	4575	1.7	3290	0.5	1055	0.3	700	1.1	2155	0.6	1235	0.2	525
22,	1.5	2900	2.8	5875	6.7	21670	3.9	9350	6.0	18300	3.0	6425	1.5	2900	0.5	1055	0.2	525	1.5	2900	0.6	1235	0.2	525
23,	7.7	26640	2.7	5600	6.6	21185	3.6	8300	5.2	14550	3.7	8650	1.3	2525	0.9	1785	0.2	525	1.7	3290	0.6	1235	0.2	525
24,	13.3	62720	3.7	8650	**9.9	68900	3.3	7300	4.7	12430	4.0	9700	1.3	2525	1.0	1970	0.2	525	1.6	3095	0.7	1420	0.3	700
25,	9.8	37970	4.2	10450	10.3	40900	3.2	7000	4.4	11225	3.2	7000	1.2	2340	1.2	2340	0.2	525	1.5	2900	0.6	1235	0.3	700
26,	7.0	23125	3.8	9000	11.3	47240	3.6	8300	4.2	10450	2.8	5875	1.1	2155	1.0	1970	0.3	700	1.5	2900	0.6	1235	0.3	700
27	5.4	15425	3.0	6425	12.6	57000	4.3	10830	4.0	9700	2.3	4575	1.1	2155	0.9	1785	0.6	1235	1.4	2710	0.6	1235	0.4	875
28,	4.9	13275	2.7	5600	10.6	42720	5.1	14125	3.8	9000	2.1	4115	1.1	2155	0.7	1420	1.0	1970	1.3	2525	0.6	1235	1.8	3490
29,	3.5	7960	2.5	5075	8.0	28200	6.8	22155	3.5	7960	1.9	3695	1.1	2155	0.6	1235	1.0	1970	1.3	2525	0.5	1055	5.4	15425
30,	3.2	7000	-----	-----	6.9	22640	8.4	30280	3.3	7300	1.7	3290	1.0	1970	0.6	1235	1.1	2155	1.2	2340	0.5	1055	5.5	15900
31,	3.6	8300	-----	-----	6.0	18300	-----	-----	3.3	7300	-----	-----	1.0	1970	0.5	1055	-----	-----	1.1	2155	-----	-----	4.4	11225

* Ice running.
† Slush ice running.
‡ Anchor ice running.
** 18.00 at noon=108400 sec.-ft.
§ River frozen December 5 to 28, 1904.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT. LYCOMING COUNTY, PA.

1905.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	D's.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.8	9000	2.9	6150	2.2	4325	6.3	19740	3.2	7000	1.7	3290	2.2	4325	2.2	4325	1.3	2525	0.7	1420	2.3	4575	9.0	33475
2,	3.6	8300	2.9	6150	2.2	4325	5.5	15900	2.9	6150	1.7	3290	2.0	3905	2.2	4325	1.2	2340	0.7	1420	2.4	4825	6.9	22640
3,	3.7	8650	2.8	5875	2.4	4825	4.8	12850	2.7	5600	1.6	3095	2.2	4325	1.6	3095	1.3	2525	1.2	2340	2.5	5075	8.4	30280
4,	4.4	11225	2.6	5325	2.4	4825	4.4	11225	2.5	5075	1.7	3290	2.2	4325	1.5	2900	2.8	5875	1.3	2525	2.5	5075	16.8	95960
5,	4.0	9700	2.4	4825	2.4	4825	4.2	10450	2.4	4825	1.7	3290	2.5	5075	1.3	2525	2.1	4115	1.8	3490	2.3	4575	12.6	57000
6,	4.7	9700	2.2	4325	2.3	4575	4.1	10075	2.3	4575	1.6	3095	2.4	4825	1.4	2710	1.8	3490	1.5	2900	2.3	4575	9.3	35155
7,	5.8	17325	2.2	4325	2.3	4575	4.2	10450	2.3	4575	1.8	3490	2.3	4575	2.1	4115	1.4	2710	1.4	2710	2.5	5075	7.5	25600
8,	9.7	37405	2.2	4325	2.4	4825	4.0	9700	2.5	5075	3.1	6710	2.2	4325	2.2	4325	1.2	2340	1.1	2155	3.0	6425	6.3	19740
9,	8.0	28200	2.0	3905	2.8	5875	3.8	9000	2.5	5075	4.2	10450	6.5	20700	1.8	3490	1.1	2155	1.0	1970	3.6	8300	5.5	15900
10	6.8	22155	1.9	3695	3.8	9000	3.7	8650	2.6	5325	4.5	11620	4.8	12850	1.5	2900	0.9	1785	0.9	1785	3.6	8300	4.8	12850
11,	5.5	15900	2.1	4115	6.7	21670	3.6	8300	2.4	4825	3.7	8650	3.7	8650	1.3	2525	0.9	1785	1.0	1970	3.0	6425	4.3	10830
12	6.2	19260	2.1	4115	6.1	18780	4.6	12020	2.4	4825	3.9	9350	2.4	7620	2.3	4575	1.9	3695	2.9	6150	2.7	5600	4.0	9700
13,	5.6	16375	1.9	3695	5.6	16375	6.0	18300	2.7	5600	4.5	11620	2.9	6150	4.9	13275	3.1	6710	3.6	8300	2.7	5600	3.8	9000
14,	6.1	18780	1.8	3490	4.9	13275	5.5	15900	3.4	7620	4.3	10830	3.3	7300	4.7	12430	3.5	7960	4.0	9700	2.6	5325	3.4	7620
15,	*6.7	21670	2.2	4325	4.8	12850	5.0	13700	3.5	7960	3.8	9000	3.7	8650	4.1	10075	2.8	5875	3.2	7000	2.5	5075	3.0	6425
16,	6.1	18780	2.2	4325	4.5	11620	4.6	12020	3.8	9000	3.3	7300	3.5	7960	5.9	17810	2.2	4325	2.8	5875	2.4	4825	2.3	4575
17,	5.4	15425	2.2	4325	4.3	10830	4.3	10830	4.2	10450	3.0	6425	3.1	6710	5.7	16850	1.8	3490	2.5	5075	2.3	4575	2.0	3905
18,	4.9	13275	2.1	4115	5.2	14550	3.9	9350	4.0	9700	2.7	5600	2.6	5325	4.5	11620	2.0	3905	2.3	4575	2.2	4325	2.1	4115
19,	5.5	15900	1.9	3695	13.2	61880	3.6	8300	3.8	9000	2.6	5325	2.3	4575	3.7	8650	2.5	5075	2.2	4325	2.1	4115	2.2	4325
20,	5.3	14985	1.9	3695	18.4	112720	3.4	7620	3.4	7620	2.7	5600	2.0	3905	3.0	6425	2.4	4825	2.8	5875	2.0	3905	2.4	4825
21,	5.2	14550	1.8	3490	16.7	94940	3.3	7300	3.2	7000	3.8	9000	1.8	3490	2.6	5325	2.3	4575	6.4	20220	1.9	3695	2.8	5875
22,	4.8	12850	1.8	3490	15.9	86900	3.7	8650	3.0	6425	6.0	18300	1.6	3095	2.3	4575	2.0	3905	6.6	21185	1.8	3490	4.8	12850
23,	4.2	10450	1.7	3290	13.6	65300	5.1	14125	2.7	5600	5.9	17810	1.6	3095	2.1	4115	1.8	3490	5.6	16375	1.6	3095	5.7	16850
24,	4.0	9700	1.7	3290	10.9	44580	5.4	15425	2.5	5075	5.8	17325	1.7	3290	1.9	3695	1.6	3095	4.7	12430	1.6	3095	5.8	17325
25,	4.0	9700	1.7	3290	10.9	44580	4.9	13275	2.3	4575	5.0	13700	1.7	3290	2.0	3905	1.4	2710	4.1	10075	1.6	3095	5.4	15425
26,	4.0	9700	1.8	3490	11.7	50080	4.5	11620	2.2	4325	4.4	11225	1.8	3490	2.1	4115	1.3	2525	3.7	8650	1.6	3095	4.9	13275
27,	3.8	9000	1.8	3490	10.9	44580	4.1	10075	2.2	4325	3.8	9000	1.5	2900	2.2	4325	1.1	2155	3.3	7300	1.7	3290	4.5	11620
28,	3.3	7300	2.1	4115	10.1	39700	3.9	9350	2.1	4115	3.3	7300	1.3	2525	2.0	3905	1.0	1970	3.0	6425	1.6	3095	4.3	10830
29,	3.0	6425	------	------	10.2	40300	3.7	8650	2.0	3905	2.8	5875	1.3	2525	1.7	3290	0.9	1785	2.7	5600	2.1	4115	4.0	9700
30,	2.7	5600	------	------	8.1	28720	3.4	7620	1.8	3490	2.5	5075	1.5	2900	1.5	2900	0.8	1605	2.5	5075	7.4	25105	5.8	17325
31,	3.0	6425	------	------	7.2	24115	------	------	1.8	3490	------	------	1.6	3095	1.4	2710	------	------	2.3	4575	------	------	7.0	23125

*River frozen from January 15 to March 18. During this period the gage was read to the top of the ice. The following comparative readings were also made:

Date.	Water surface.	Top of ice.	Thickness of ice.
	Feet.	Feet.	Feet.
February 15,	2.1	2.2	1.0
February 20,	1.8	1.9	1.0
February 27,	1.8	1.8	0.5

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

1906.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.7	16850	3.7	8650	1.9	3695	10.7	43340	2.9	6150	5.2	14550	1.1	2155	1.4	2710	1.3	2525	0.9	1785	2.2	4325	2.2	4325
2,	5.2	14550	3.4	7620	1.2	2340	9.6	36840	2.7	5600	4.5	11620	1.0	1970	1.3	2525	1.0	1970	0.8	1605	2.2	4325	2.1	4115
3,	4.5	11620	2.5	5075	1.3	2525	8.2	29240	2.7	5600	3.9	9350	1.1	2155	1.1	2155	1.3	2525	0.9	1785	2.3	4575	2.1	4115
4,	4.3	10830	2.3	4575	4.4	11225	7.6	26120	2.8	5875	3.4	7620	1.1	2155	1.9	3695	2.7	5600	1.0	1970	2.1	4115	1.9	3695
5,	5.4	15425	2.5	5075	5.3	14985	7.6	26120	2.9	6150	2.9	6150	1.1	2155	2.2	4325	2.5	5075	0.9	1785	2.1	4115	1.7	3290
6,	6.3	19740	2.6	5325	4.0	9700	8.5	30800	3.1	6710	2.7	5600	1.1	2155	1.8	3490	2.5	5075	1.2	2340	2.1	4115	1.8	3490
7,	5.5	14985	2.0	3905	3.4	7620	8.5	30800	2.8	5875	2.8	5875	0.9	1785	1.7	3290	2.1	4115	1.4	2710	1.9	3695	2.5	5075
8,	4.6	12020	1.9	3695	3.1	6710	7.5	25600	2.6	5325	2.6	5325	0.8	1605	1.7	3290	1.6	3095	1.4	2710	1.8	3490	5.2	14550
9	3.7	8650	2.0	3905	2.7	5600	6.4	20220	2.4	4825	2.3	4575	0.8	1605	1.7	3290	1.2	2340	1.4	2710	1.9	3095	4.8	12850
10,	3.7	8650	2.2	4325	2.8	5875	7.7	26640	2.4	4825	2.1	4115	0.7	1420	2.7	5600	1.1	2155	1.5	2900	1.7	3290	4.2	10450
11,	3.4	7620	2.1	4125	2.5	5075	10.8	43960	2.5	5075	2.1	4115	0.6	1235	3.9	9350	0.8	1605	1.3	2525	1.6	3095	3.9	9350
12,	2.7	5600	1.9	3695	2.4	4825	10.1	39700	2.5	5075	2.1	4115	0.4	875	5.7	16850	0.7	1420	1.3	2525	1.7	3290	4.1	10075
13,	3.3	7300	1.8	3490	2.2	4325	8.5	30800	2.4	4825	1.9	3695	0.5	1055	4.6	12020	1.0	1970	1.4	2710	1.7	3290	3.9	9350
14,	3.2	7000	1.9	3695	2.1	4115	7.3	24610	2.3	4575	1.7	3290	0.5	1055	3.8	9000	0.9	1785	1.2	2340	1.7	3290	3.8	9000
15,	3.1	6710	2.3	4575	2.1	4115	7.2	24115	2.2	4325	1.5	2900	0.6	1235	3.0	6425	1.0	1970	1.2	2340	1.7	3290	3.7	8650
16,	2.9	6150	2.2	4325	1.9	3695	8.0	28200	2.2	4325	1.4	2710	0.4	875	2.4	4825	1.0	1970	1.2	2340	1.6	3095	3.5	7960
17,	2.9	6150	1.6	3095	1.9	3695	7.4	25105	2.1	4115	2.0	3905	0.4	875	2.2	4325	0.9	1785	1.1	2155	1.6	3095	4.1	10075
18,	3.1	6710	1.4	2710	1.8	3490	6.5	20700	2.8	5875	2.0	3905	3.5	7960	1.7	3290	0.9	1785	1.0	1970	1.6	3095	4.1	10075
19,	3.2	7000	1.4	2710	1.7	3290	5.8	17325	2.7	5600	3.0	6425	2.5	5075	1.4	2710	1.0	1970	1.1	2155	2.3	4575	3.6	8300
20,	3.4	7620	1.6	3095	1.6	3095	5.2	14550	2.4	4825	3.6	8300	2.3	4575	1.4	2710	0.8	1605	2.1	4115	3.1	6710	3.0	6425
21,	3.9	9350	1.5	2900	1.3	2525	4.9	13275	2.2	4325	3.1	6710	2.3	4575	1.7	3290	0.8	1605	5.7	16850	3.5	7960	3.2	7000
22,	3.8	9000	1.7	3290	1.5	2900	4.5	11620	2.0	3905	2.9	6150	1.9	3695	1.9	3695	0.9	1785	5.2	14550	3.7	8650	3.4	7620
23,	5.6	16375	1.9	3695	1.7	3290	4.3	10830	1.8	3490	2.2	4325	1.7	3290	2.4	4825	1.0	1970	4.3	10830	3.9	9350	3.3	7300
24	11.4	47920	1.8	3490	1.6	3095	4.3	10830	1.7	3290	1.9	3695	1.7	3290	2.2	4325	1.1	2155	3.6	8300	3.9	9350	3.0	6425
25,	10.7	43340	1.9	3695	1.4	2719	4.2	10450	1.9	3695	1.7	3290	1.5	2900	2.0	3905	1.1	2155	3.3	7300	3.4	7620	2.1	4115
26,	8.4	30280	2.0	3905	1.6	3095	4.0	9700	2.3	4575	1.5	2900	1.5	2900	1.9	3695	1.0	1970	2.9	6150	3.2	7000	1.6	3095
27,	6.9	22640	1.9	3695	1.9	3695	3.7	8650	2.3	4575	1.4	2710	1.4	2710	1.7	3290	0.9	1785	2.6	5325	3.1	6710	1.8	3490
28,	6.1	18780	1.2	2340	4.3	10830	3.4	7620	7.7	26640	1.3	2525	1.2	2340	2.2	4325	0.9	1785	2.6	5325	2.7	5600	1.9	3695
29,	5.2	14550	-----	-----	8.9	32940	3.2	7000	8.3	29760	1.2	2340	1.2	2340	2.0	3905	0.8	1605	2.4	4825	2.5	5075	2.4	4825
30,	4.8	12850	-----	-----	7.7	26640	3.1	6710	7.3	24610	1.2	2340	1.6	3095	1.8	3490	0.8	1605	2.3	4575	2.5	5075	2.7	5600
31,	4.1	10075	-----	-----	8.4	30280	-----	-----	6.0	18300	-----	-----	1.5	2900	1.5	2900	-----	-----	2.3	4575	-----	-----	2.9	6150

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

1907.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	8.2	29240	*2.9	6150	1.7	3290	5.8	17325	5.1	14125	1.9	3695	4.4	11225	0.8	1605	.33	753	1.3	2525	2.4	4825	2.0	3905
2,	8.7	31870	2.7	5600	1.6	3095	5.1	14125	4.7	12430	2.4	4825	5.9	17810	0.8	1605	.33	753	1.5	2900	2.1	4115	2.0	3905
3,	7.3	24610	3.5	7960	1.6	3095	4.6	12020	4.3	10830	4.8	12850	5.7	16850	0.7	1420	.33	753	1.3	2525	4.4	11225	1.9	3695
4,	6.3	19740	3.4	7620	2.1	4115	4.3	10830	4.1	10075	5.9	17810	4.8	12850	0.6	1235	.33	753	1.3	2525	5.0	13700	1.8	3490
5,	6.6	21185	2.7	5600	1.9	3695	3.9	9350	4.0	9700	5.3	14985	4.0	9700	0.7	1420	.53	1109	1.5	2900	5.3	14985	1.6	3095
6,	6.7	21670	2.7	5600	1.9	3695	3.6	8300	4.0	9700	5.2	14550	3.5	7960	0.6	1235	0.7	1420	2.1	4115	4.8	12850	1.4	2710
7,	6.1	18780	2.9	6150	2.5	5075	3.4	7620	4.2	10450	5.1	14125	3.1	6710	0.6	1235	0.6	1235	2.6	5325	4.8	12850	1.4	2710
8,	5.7	16850	2.5	5075	2.3	4575	3.1	6710	4.1	10075	4.8	12850	2.9	6150	0.7	1420	0.6	1235	2.2	4325	5.0	13700	1.5	2900
9	6.7	21670	2.4	4825	2.0	3905	3.0	6425	4.4	11225	4.4	11225	2.8	5875	0.7	1420	0.5	1055	2.4	4825	4.9	13275	1.6	3095
10,	7.0	23125	2.4	4825	2.1	4115	3.2	7000	5.6	16375	3.9	9350	2.4	4825	0.7	1420	0.8	1605	2.4	4825	4.5	11620	2.7	5600
11,	6.6	21185	2.8	5875	2.1	4115	3.2	7000	5.9	17810	3.5	7960	2.1	4115	0.8	1605	1.1	2155	2.5	5075	4.1	10075	6.4	20220
12,	5.9	17810	2.2	4325	2.1	4115	3.0	6425	5.5	15900	3.2	7000	2.1	4115	0.6	1235	2.2	4325	2.1	4115	3.7	8650	6.2	19260
13,	5.4	15425	2.7	5600	2.0	3905	3.1	6710	5.0	13700	3.0	6425	2.1	4115	0.9	1785	1.5	2900	1.8	3490	3.3	7300	5.9	17810
14,	6.3	19740	2.3	4575	2.9	6150	2.9	6150	4.4	11225	3.0	6425	1.9	3695	0.8	1605	1.5	2900	1.8	3490	2.9	6150	5.2	14550
15,	6.7	21670	2.2	4325	16.7	94940	2.8	5875	4.0	9700	3.2	7000	1.8	3490	0.6	1235	1.3	2525	1.6	3095	2.7	5600	4.7	12430
16,	7.9	27680	2.2	4325	14.0	68900	2.8	5875	3.8	9000	3.4	7620	1.6	3095	0.53	1109	1.1	2155	1.4	2710	2.5	5075	4.3	10830
17,	7.0	23125	2.3	4575	10.8	43960	2.7	5600	3.5	7960	3.1	6710	1.4	2710	.43	929	1.0	1970	1.3	2525	2.2	4325	3.9	9350
18,	6.2	19260	2.4	4825	10.6	42720	2.7	5600	3.3	7300	2.8	5875	1.5	2900	.33	753	0.8	1605	1.2	2340	2.1	4115	3.5	7960
19,	5.7	16850	2.2	4325	10.6	42720	2.7	5600	3.1	6710	2.3	4575	1.5	2900	.33	753	0.7	1420	1.1	2155	2.0	3905	3.2	7000
20,	6.2	19260	2.2	4325	10.4	41500	2.6	5325	3.0	6425	2.1	4115	1.5	2900	.43	929	0.9	1785	1.1	2155	2.0	3905	2.5	5075
21,	11.0	45200	2.0	3905	12.3	54640	2.4	4825	2.9	6150	2.3	4575	1.9	3695	.33	753	0.9	1785	1.0	1970	2.0	3905	2.3	4575
22,	9.6	36840	2.1	4115	10.5	42100	2.5	5075	2.7	5600	2.0	3905	1.6	3095	.33	753	1.1	2155	1.0	1970	2.0	3905	2.3	4575
23,	7.5	25600	2.5	5075	10.1	39700	2.3	4575	2.5	5075	1.9	3695	1.4	2710	.33	753	1.3	2525	1.0	1970	2.2	4325	2.3	4575
24	6.2	19260	1.9	3695	11.1	45880	2.5	5075	2.3	4575	2.4	4825	1.3	2525	.43	929	1.2	2340	1.0	1970	2.0	3905	7.0	23125
25,	5.7	16850	1.6	3095	9.8	37970	3.9	9350	2.3	4575	3.6	8300	1.1	2155	.43	929	1.2	2340	1.0	1970	2.2	4325	10.0	39100
26,	4.3	10830	1.8	3490	8.0	28200	4.4	11225	2.1	4115	3.3	7300	1.0	1970	.33	753	1.3	2525	0.9	1785	2.0	3905	8.4	30280
27,	4.5	11620	1.5	2900	6.9	22640	5.9	17810	2.1	4115	3.1	6710	1.1	2155	.33	753	1.1	2155	0.9	1785	1.8	3490	6.5	20700
28,	3.7	8650	1.6	3095	6.8	22155	7.5	25600	2.4	4825	3.1	6710	0.9	1785	.33	753	1.0	1970	1.1	2155	1.9	3695	6.0	18300
29,	3.4	7620	-----	-----	7.3	24610	6.4	20220	2.4	4825	2.9	6150	1.0	1970	.33	753	1.1	2155	2.3	4575	1.9	3695	6.2	19260
30,	3.3	7300	-----	-----	7.3	24610	5.4	15425	2.2	4325	2.8	5875	1.4	2710	.33	753	1.1	2155	3.2	7000	2.0	3905	7.2	24115
31,	3.4	7620	-----	-----	6.5	20700	-----	-----	2.2	4325	-----	-----	1.0	1970	.33	753	-----	-----	3.0	6425	-----	-----	7.2	24115

*River above dam frozen over all month.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.7	21670	2.3	4575	2.8	5875	8.3	29760	4.0	9700	7.3	24610	0.9	1785	0.7	1420	0.5	1055	0.4	875	0.6	1235	0.5	1055
2,	6.0	18300	2.1	4115	2.4	4825	7.2	24115	5.1	14125	6.4	20220	0.8	1605	0.6	1235	0.4	875	0.4	875	0.6	1235	0.4	875
3,	5.3	14985	3.0	6425	3.2	7000	6.4	20220	5.7	16850	5.3	14985	1.1	2155	0.5	1055	0.4	875	0.4	875	0.6	1235	0.4	875
4,	4.7	12430	2.8	5875	6.2	19260	6.1	18780	5.7	16850	4.7	12430	1.2	2340	0.5	1055	0.4	875	0.3	700	0.5	1055	0.4	875
5,	4.2	10450	2.6	5325	5.7	16850	5.4	15425	5.6	16375	4.1	10075	1.3	2525	0.7	1420	0.3	700	0.3	700	0.5	1055	0.4	875
6,	3.7	8650	2.6	5325	5.1	14125	5.0	13700	5.2	14550	3.6	8300	1.3	2525	0.8	1605	0.3	700	0.4	875	0.5	1055	0.4	875
7.	3.2	7000	2.7	5600	5.1	14125	4.7	12430	5.2	14550	3.2	7000	1.1	2155	1.0	1970	0.3	700	0.4	875	0.5	1055	0.4	875
8.	3.0	6425	2.9	6150	7.6	26120	4.4	11225	9.0	33475	2.8	5875	1.0	1970	1.4	2710	0.3	700	0.3	700	0.5	1055	0.4	875
9,	2.9	6150	2.9	6150	7.5	25600	4.6	12020	10.5	42100	2.5	5075	0.9	1785	1.0	1970	0.3	700	0.3	700	0.5	1055	0.5	1055
10,	3.1	6710	2.4	4825	7.1	23620	6.2	19260	9.4	35715	2.6	5325	0.7	1420	1.0	1970	0.3	700	0.3	700	0.4	875	0.5	1055
11,	2.8	5875	2.3	4575	6.4	20220	6.6	21185	8.2	29240	2.5	5075	0.6	1235	1.0	1970	0.3	700	0.4	875	0.4	875	0.5	1055
12,	2.5	5075	2.2	4325	6.7	21670	5.9	17810	7.1	23620	2.3	4575	0.6	1235	0.9	1785	0.3	700	0.4	875	0.4	875	0.5	1055
13,	7.4	25105	2.1	4115	8.5	30800	5.5	15900	6.1	18780	2.1	4115	0.7	1420	0.8	1605	0.2	525	0.4	875	0.4	875	0.5	1055
14,	9.0	33475	2.1	4115	11.2	46560	4.8	12850	5.4	15425	1.9	3695	0.7	1420	0.7	1420	0.2	525	0.4	875	0.4	875	0.5	1055
15,	7.8	27160	2.6	5325	13.4	63560	4.3	10830	5.3	14985	1.8	3490	0.7	1420	0.7	1420	0.2	525	0.4	875	0.4	875	0.6	1235
16,	6.5	20700	17.0	98000	15.8	85900	4.5	11620	7.8	27160	1.7	3290	0.7	1420	0.7	1420	0.2	525	0.3	700	0.4	875	0.6	1235
17,	5.5	15900	13.2	61880	15.0	78100	5.2	14550	8.2	29240	2.0	3905	0.7	1420	0.7	1420	0.2	525	0.3	700	0.4	875	0.6	1235
18,	4.9	13275	9.3	35155	11.4	47920	5.1	14125	8.3	29760	1.8	3490	0.8	1605	0.8	1605	0.2	525	0.3	700	0.4	875	0.6	1235
19,	4.3	10830	7.4	25105	12.3	54640	5.2	14550	7.9	27680	1.6	3095	0.4	875	0.9	1785	0.2	525	0.3	700	0.5	1055	0.7	1420
20,	3.8	9000	6.2	19260	17.4	102160	6.0	18300	7.6	26120	1.4	2710	0.6	1235	0.9	1785	0.2	525	0.3	700	0.5	1055	0.9	1785
21	3.5	7960	5.4	15425	13.1	61040	6.5	20700	10.9	44580	1.3	2525	0.6	1235	0.9	1785	0.2	525	0.3	700	0.5	1055	2.7	5600
22,	3.4	7620	4.6	12020	9.9	38535	6.0	18300	9.9	38535	1.2	2340	1.0	1970	0.9	1785	0.2	525	0.3	700	0.5	1055	1.9	3695
23,	3.4	7620	4.1	10075	8.5	30800	5.3	14985	9.8	37970	1.1	2155	2.1	4115	0.7	1420	0.2	525	0.3	700	0.5	1055	1.5	2900
24.	3.4	7620	3.6	8300	8.2	29240	4.8	12850	10.2	40300	1.0	1970	2.0	3905	0.7	1420	0.2	525	0.3	700	0.5	1055	1.1	2155
25,	2.3	4575	3.2	7000	9.0	32475	4.3	10830	8.4	30280	1.0	1970	2.5	5075	0.6	1235	0.2	525	0.3	700	0.5	1055	0.9	1785
26,	2.6	5325	3.2	7000	9.5	36275	4.1	10075	6.9	22640	1.3	2525	2.0	3905	0.6	1235	0.2	525	0.5	1055	0.5	1055	0.8	1605
27,	2.5	5075	4.7	12430	9.4	35715	3.9	9350	6.5	20700	1.1	2155	1.5	2900	0.6	1235	0.2	525	1.4	2710	0.5	1055	0.8	1605
28,	2.9	6150	4.3	10830	11.2	46560	3.8	9000	6.4	20220	1.0	1970	1.2	2340	0.6	1235	0.2	525	1.2	2340	0.5	1055	0.8	1605
29,	2.8	5875	3.2	7000	12.2	53860	3.6	8300	5.6	16375	0.9	1785	1.1	2155	0.5	1055	0.3	700	1.1	2155	0.5	1055	0.9	1785
30,	2.5	5075	------	------	12.4	55420	3.2	7000	5.5	15900	0.9	1785	1.0	1970	0.5	1055	0.3	700	1.0	1970	0.5	1055	1.0	1970
31,	2.7	5600	------	------	10.2	40300	------	------	7.8	27160	------	------	0.8	1605	0.5	1055	------	------	0.9	1785	------	------	1.0	1970

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

1909. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.4	2710	2.5	5075	6.4	20220	4.2	10450	21.0	142375	2.6	5325	2.3	4575	0.5	1055	0.3	700	0.3	700	0.5	1055	0.4	875
2,	1.3	2525	1.8	3490	5.5	15900	4.0	9700	19.4	123880	2.3	4575	2.0	3905	0.5	1055	0.3	700	0.3	700	0.5	1055	0.4	875
3,	1.3	2525	2.4	4825	5.0	13700	3.9	9350	14.1	69810	2.2	4325	1.8	3490	0.5	1055	0.3	700	0.2	525	0.4	875	0.3	700
4,	1.3	2525	2.2	4325	5.8	17325	3.8	9000	11.3	47240	2.1	4115	1.5	2900	0.5	1055	0.3	700	0.2	525	0.4	875	0.3	700
5,	1.4	2710	2.6	5325	5.2	14550	3.7	8650	9.7	37405	3.3	7300	1.4	2710	0.5	1055	0.3	700	0.2	525	0.3	700	0.3	700
6	2.8	5875	2.8	5875	4.7	12430	3.5	7960	8.4	30280	5.3	14985	1.3	2525	0.5	1055	0.2	525	0.2	525	0.3	700	0.3	700
7,	5.3	14985	7.0	23125	4.2	10450	4.1	10075	7.3	24610	4.9	13275	1.2	2340	0.4	875	0.2	525	0.2	525	0.3	700	0.3	700
8,	4.8	12850	7.4	25105	4.0	9700	6.0	18300	6.4	20220	4.5	11620	1.1	2155	0.4	875	0.2	525	0.2	525	0.3	700	0.3	700
9.	3.8	9000	6.2	19260	3.9	9350	6.4	20220	5.6	16375	3.9	9350	1.0	1970	0.4	875	0.2	525	0.2	525	0.3	700	0.2	525
10,	2.8	5875	5.1	14125	4.5	11620	5.7	16850	5.1	14125	3.9	9350	1.0	1970	0.4	875	0.2	525	0.2	525	0.3	700	0.2	525
11,	2.6	5325	5.5	15900	6.3	19740	5.1	14125	5.0	13700	3.8	9000	1.0	1970	0.4	875	0.3	700	0.2	525	0.3	700	0.3	700
12,	2.6	5325	4.6	12020	7.0	23125	4.6	12020	4.9	13275	4.5	11620	0.9	1785	0.3	700	0.3	700	0.2	525	0.3	700	0.3	700
	2.7	**5600**	**4.5**	**11620**	6.3	19740	4.2	10450	4.5	11620	4.4	11225	0.8	1605	0.3	700	0.3	700	0.5	1055	0.3	700	0.3	700
14,	2.0	3905	4.3	10830	5.7	16850	5.8	17325	4.1	10075	4.7	12430	0.7	1420	0.3	700	0.2	525	0.6	1235	0.3	700	1.5	2900
15,	**1.5**	**2900**	**5.6**	**16375**	**5.2**	**14550**	12.3	54640	3.8	9000	6.4	20220	0.7	1420	0.3	700	0.2	525	0.7	1420	0.3	700	2.3	4575
16,	2.3	4575	9.5	36275	4.7	12420	10.8	43960	3.7	8650	5.5	15900	0.7	1420	0.3	700	0.2	525	0.7	1420	0.3	700	1.8	3490
17,	3.3	7300	12.0	52300	4.2	10450	8.4	30280	3.4	7620	4.5	11620	0.7	1420	0.3	700	0.2	525	0.6	1235	0.3	700	1.6	3095
18,	2.5	5075	10.2	40300	3.8	9000	6.9	22640	3.2	7000	5.0	13700	0.6	1235	0.5	1055	0.2	525	0.5	1055	0.3	700	1.7	3290
19,	2.5	5075	8.2	29240	3.5	7960	5.9	17810	3.0	6425	4.3	10830	0.6	1235	0.6	1235	0.2	525	0.5	1055	0.2	525	2.0	3905
20,	2.3	4575	8.1	28720	3.3	7300	5.4	15425	2.7	5600	3.6	8300	0.6	1235	0.5	1055	0.2	525	0.4	875	0.2	525	1.6	3095
21	2.0	3905	8.2	29240	3.1	6710	5.0	13700	2.6	5325	3.2	7000	0.6	1235	0.5	1055	0.2	525	0.4	875	0.3	700	0.7	1420
22,	2.0	3905	7.4	25105	3.0	6475	5.1	14125	2.5	5075	2.8	5875	0.6	1235	0.5	1055	0.2	525	0.4	875	0.3	700	0.7	1420
23	2.1	4115	6.6	21185	2.8	5875	6.4	20220	2.4	4825	2.5	5075	0.7	1420	0.5	1055	0.2	525	0.4	875	0.3	700	0.7	1420
24,	2.2	4325	8.9	32940	2.6	5325	6.7	21670	2.3	4575	2.3	4575	0.7	1420	0.4	875	0.3	700	0.4	875	0.3	700	0.7	1420
25,	5.8	17325	14.5	73450	2.6	5325	6.0	18300	2.2	4325	2.3	4575	1.0	1970	0.4	875	0.4	875	0.5	1055	0.3	700	0.7	1420
26,	10.8	43960	12.0	52300	3.9	9350	5.6	16375	2.1	4115	2.5	5075	1.1	2155	0.4	875	0.4	875	0.6	1235	0.4	875	0.6	1235
27,	9.3	35155	9.3	35155	5.0	13700	5.1	14125	2.0	3905	2.4	4825	0.9	1785	0.4	875	0.4	875	0.6	1235	0.4	875	0.6	1235
28,	7.4	25105	7.6	26120	5.1	14125	4.8	12850	2.5	5075	2.2	4325	0.8	1605	0.4	875	0.3	700	0.6	1235	0.4	875	0.6	1235
29,	5.7	16850	-----	-----	5.0	13709	4.8	12850	3.0	6425	2.5	5075	0.7	1420	0.4	875	0.3	700	0.6	1235	0.4	875	0.5	1055
30,	4.6	12020	-----	-----	4.8	12850	9.6	36840	3.0	6425	2.4	4825	0.6	1235	0.4	875	0.3	700	0.6	1235	0.4	875	0.5	1055
31,	4.0	9700	-----	-----	4.5	11620	-----	-----	2.8	5875	-----	-----	0.5	1055	0.3	700	-----	-----	0.5	1055	-----	-----	0.4	875

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

1910. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	0.4	875	2.4	4825	‖16.2	89900	3.4	7620	6.0	18300	3.0	6425	1.3	2525	0.4	875	0.2	525	1.4	2710	0.4	875	1.4	2710
2,	0.4	875	2.0	3905	15.7	84900	3.1	6710	5.6	16375	2.8	5875	1.2	2340	0.4	875	0.2	525	0.9	1785	0.4	875	1.7	3290
3,	0.5	1055	2.4	4825	15.4	81940	2.9	6150	5.3	14985	2.7	5600	1.2	2340	0.3	700	0.2	525	0.8	1605	0.4	875	1.5	2900
4,	0.7	1420	2.3	4575	14.3	71630	2.7	5600	5.1	14125	2.7	5600	1.2	2340	0.3	700	0.4	875	0.7	1420	0.4	875	1.4	2710
5,	0.6	1235	2.2	4325	12.7	57800	2.6	5325	4.9	13275	2.6	5325	1.1	2155	0.3	700	1.0	1970	0.7	1420	0.4	875	1.2	2340
6	0.6	1235	2.2	4325	11.4	47920	2.5	5075	4.6	12020	2.6	5325	1.0	1970	0.3	700	1.3	2525	0.6	1235	0.4	875	1.1	2155
7,	1.7	3290	2.8	5875	12.8	58600	2.5	5075	4.6	12020	2.5	5075	0.9	1785	0.3	700	1.5	2900	0.5	1055	0.4	875	1.0	1970
8,	2.1	4115	2.4	4825	13.7	66200	2.5	5075	4.5	11620	2.6	5325	0.8	1605	0.3	700	1.2	2340	0.5	1055	0.4	875	0.9	1785
9.	1.7	3290	2.4	4825	10.5	42100	2.5	5075	3.7	8650	2.6	5325	0.7	1420	0.3	700	1.0	1970	0.5	1055	0.4	875	0.7	1420
10,	1.4	2710	2.3	4575	8.6	31335	2.2	4325	3.6	8300	2.5	5075	0.8	1605	0.3	700	0.8	1605	0.5	1055	0.4	875	0.6	1235
11,	1.6	3095	2.1	4115	7.3	24610	2.0	3905	3.3	7300	3.1	6710	0.8	1605	0.3	700	0.7	1420	0.4	875	0.4	875	0.7	1420
12,	1.7	3290	2.1	4115	5.8	17325	1.9	3695	3.1	6710	4.3	10830	0.8	1605	0.4	875	1.1	2155	0.4	875	0.4	875	0.7	1420
13,	1.7	3290	1.7	3290	6.0	18300	1.8	3490	2.8	5875	4.6	12020	0.8	1605	0.4	875	0.9	1785	0.3	700	0.4	875	0.6	1235
14,	1.7	3290	1.5	2900	5.6	16375	1.7	3290	2.6	5325	4.5	11620	1.3	2525	0.4	875	0.8	1605	0.3	700	0.5	1055	0.6	1235
15,	1.2	2340	1.7	3290	5.4	15125	1.6	3095	2.4	4825	4.1	10075	1.0	1970	0.3	700	0.7	1420	0.3	700	0.5	1055	0.6	1235
16,	1.0	1970	1.7	3290	5.2	14550	1.4	2710	2.3	4575	3.8	9000	0.8	1605	0.3	700	0.6	1235	0.3	700	0.5	1055	0.7	1420
17,	0.9	1785	1.8	3490	4.6	12020	1.3	2525	2.2	4325	4.9	13275	0.8	1605	0.3	700	0.5	1055	0.3	700	0.5	1055	0.7	1420
18,	1.1	2155	1.5	2900	4.3	10830	1.5	2900	2.0	3905	4.9	13275	1.1	2155	0.2	525	0.4	875	0.3	700	0.5	1055	0.6	1235
19,	1.2	2340	1.5	2900	4.2	10450	4.9	13275	1.9	3695	4.3	10830	1.0	1970	0.2	525	0.4	875	0.3	700	0.5	1055	0.6	1235
20,	2.1	4115	3.1	6710	4.3	10830	6.0	18300	1.9	3695	3.8	9000	1.0	1970	0.2	525	0.3	700	0.3	700	0.5	1055	0.6	1235
21,	*7.4	25105	3.8	9000	5.3	14985	6.6	21185	2.0	3905	3.4	7620	0.9	1785	0.2	525	0.3	700	0.3	700	0.5	1055	0.6	1235
22,	†12.14	53390	4.0	9700	6.4	20220	6.9	22640	2.1	4115	2.9	6150	0.8	1605	0.2	525	0.3	700	0.3	700	0.5	1055	0.6	1235
23	10.8	43960	4.0	9700	6.3	19740	6.4	20220	2.2	4325	2.6	5325	0.7	1420	0.2	525	0.3	700	0.3	700	0.5	1055	0.6	1235
24,	8.2	29240	3.5	7960	6.3	19740	6.8	22155	2.1	4115	2.3	4575	0.5	1055	0.2	525	0.3	700	0.3	700	0.5	1055	0.7	1420
25,	6.5	20700	5.0	13700	6.4	20220	15.8	85900	2.9	6150	2.1	4115	0.5	1055	0.2	525	0.3	700	0.3	700	0.5	1055	0.6	1235
26.	5.2	14550	4.8	12850	6.5	20700	§17.1	99040	5.2	14550	1.9	3695	0.5	1055	0.2	525	0.5	1055	0.5	1055	0.6	1235	0.5	1055
27,	4.6	12020	4.3	10830	6.5	20700	14.6	74380	4.8	12850	1.7	3290	0.5	1055	0.2	525	1.6	3095	0.6	1235	0.9	1785	0.5	1055
28,	4.0	9700	‡9.57	36670	5.3	14985	10.9	44580	4.3	10830	1.6	3095	0.4	875	0.2	525	2.0	3905	0.5	1055	1.2	2340	0.5	1055
29,	3.5	7960	------	------	4.6	12020	8.6	31335	3.8	9000	1.4	2710	0.4	875	0.2	525	2.0	3905	0.5	1055	1.4	2710	0.7	1420
30,	3.2	7000	------	------	4.2	10450	7.4	25105	3.4	7620	1.4	2710	0.4	875	0.2	525	1.8	3490	0.5	1055	1.4	2710	0.9	1785
31,	3.0	6425	------	------	3.7	8650	------	------	3.1	6710	------	------	0.4	875	0.2	525	------	------	0.4	875	------	------	2.6	5325

*Maximum, 8.2 feet at 10.20 P. M.
†Maximum, 12.5 feet at 12 noon.=56200 sec.-ft.
‡Maximum, 12.5 feet at 5 P. M.=56200 sec.-ft.
‖Maximum, 16.4 feet at 11.40 A. M.= 91900 sec.-ft.
§Maximum, 17.3 feet at 2 P. M.=101120 sec.-ft.

Note.—December 7th to 11th frozen at dam and above gage. December 13th to 31st river frozen.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT LYCOMING COUNTY, PA.

1911. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.5	15900	6.8	22155	4.2	10450	6.5	20700	4.85	13062	2.45	4950	2.15	4220	1.34	2599	5.23	14680	4.92	13360	4.31	10870	4.0	9700
2,	5.3	14985	6.0	18300	5.1	14125	5.9	17810	5.00	13700	2.75	5738	2.05	4010	1.34	2599	4.63	12143	7.42	25204	3.91	9585	4.0	9700
3,	5.6	16375	5.4	15425	5.4	15425	4.4	11225	5.35	15205	2.65	5462	1.95	3800	1.54	2978	4.07	9962	15.92	87100	3.71	8685	3.9	9350
4,	6.2	19260	5.1	14125	5.5	15900	4.2	10450	5.00	13700	2.65	5462	1.85	3592	1.54	2978	3.63	8405	10.92	44704	3.51	7994	3.8	9000
5,	6.5	20700	4.8	12850	4.4	11225	5.2	14550	4.55	11820	2.80	5875	1.75	3390	1.64	3173	2.93	6232	8.52	30907	3.21	7050	3.8	9000
6,	6.5	20700	4.5	11620	4.0	9700	5.7	16850	4.35	11028	2.55	5200	1.75	3390	1.74	3370	2.83	5958	6.82	22252	3.01	6454	3.7	8650
7,	4.6	12020	3.8	9000	3.7	8650	5.3	14985	4.20	10450	2.45	4950	1.55	2998	1.74	3370	3.23	7090	6.42	20316	2.91	6178	3.7	8650
8,	4.4	11225	3.7	8650	3.5	7960	9.4	35715	3.75	8825	2.35	4700	1.45	2805	1.74	3370	3.03	6510	7.32	24709	3.01	6454	3.6	8300
9	4.4	11225	3.7	8650	3.3	7300	9.0	33475	3.70	8650	2.35	4700	1.45	2805	1.64	3173	3.33	7396	8.02	28304	4.31	10870	3.5	7960
10,	3.9	9350	4.0	9700	3.3	7300	8.1	28720	3.45	7790	2.40	4825	1.35	2618	1.64	3173	11.13	46084	7.12	23719	4.51	11660	3.5	7960
11,	3.2	7000	3.5	7960	3.6	8300	7.7	26640	3.45	7790	2.25	4450	1.45	2805	1.54	2978	9.43	35883	6.42	20316	4.41	11264	3.8	9000
12	3.0	6425	3.2	7000	3.7	8650	7.3	24610	3.50	7960	2.35	4700	1.25	2432	1.54	2978	7.23	24264	5.82	17422	4.51	11660	4.0	9700
13,	3.4	7620	3.0	6425	4.7	12430	6.8	22155	3.35	7460	2.65	5462	1.35	2618	1.54	2978	6.83	22300	5.42	15520	4.41	11264	4.2	10450
14,	7.8	27100	3.4	7620	5.0	13700	6.3	19740	3.10	6710	5.45	15662	1.35	2618	1.44	2786	5.03	13828	5.02	13785	4.41	11264	5.0	13700
15,	12.3	54640	3.2	7000	5.2	14550	7.1	23620	2.95	6288	5.20	14550	1.45	2805	1.44	2786	4.53	11740	5.72	16945	4.21	10488	5.4	15425
16,	15.5	82900	4.4	11225	4.9	13275	8.7	31870	2.95	6288	5.05	13912	1.45	2805	1.74	3370	4.73	12556	5.42	15520	4.01	9738	6.9	22640
17,	9.3	35155	4.5	11620	4.6	12020	8.1	28720	2.80	5875	4.95	13488	1.55	2998	1.54	2978	5.93	17957	5.32	15073	4.01	9738	9.6	36840
18,	6.5	20700	4.7	12430	4.5	11620	7.5	25600	2.65	5462	4.75	12640	1.75	3390	1.44	2786	5.03	13828	5.22	14637	4.31	10870	9.9	38535
19,	5.7	16850	4.9	13275	4.6	12020	6.7	21670	2.80	5875	4.25	10640	1.65	3192	1.44	2786	6.03	18444	6.02	18396	4.21	10488	8.7	31870
20,	5.2	14550	5.8	17325	4.9	13275	6.9	22640	2.95	6288	3.60	8300	1.65	3192	1.34	2599	5.23	14680	5.92	17908	4.11	10112	7.7	26640
21,	4.3	10830	5.1	14125	4.7	12430	8.0	28200	2.85	6012	2.95	6288	1.55	2998	1.34	2599	4.63	12143	6.22	19356	4.91	13318	6.4	20220
22,	3.6	8300	4.2	10450	4.4	11225	8.3	29760	2.70	5600	2.55	5200	1.55	2998	1.34	2599	4.13	10188	6.42	20316	5.71	16898	5.6	16375
23,	4.6	12020	3.7	8650	4.3	10830	7.8	27160	2.65	5462	2.45	4950	1.45	2805	1.34	2599	3.63	8405	5.72	16945	6.01	18348	6.1	18780
24,	4.4	11225	4.5	11620	4.2	10450	7.4	25105	2.80	5875	2.25	4450	1.45	2805	1.34	2599	3.43	7722	5.62	16470	5.31	15029	5.8	17325
25	4.0	9700	4.1	10075	5.0	13700	6.4	20220	2.95	6288	2.50	5075	1.45	2805	1.54	2978	3.33	7396	5.32	15073	5.31	15029	5.8	17325
26,	3.8	9000	4.0	9700	4.7	12430	6.4	20220	2.85	6012	2.25	4450	1.45	2805	2.04	3989	3.23	7090	5.22	14637	5.01	13742	5.5	15900
27,	3.7	8650	4.5	11620	5.3	14985	6.4	20220	2.90	6150	2.35	4700	1.45	2805	2.14	4199	3.03	6510	5.02	13785	4.81	12892	5.8	17325
28,	4.1	10075	4.4	11225	5.4	15425	6.2	19260	2.75	5738	2.25	4450	1.45	2805	2.74	5710	2.83	5958	4.72	12514	4.61	12061	5.9	17810
29,	7.8	27160	------	------	9.1	34035	5.8	17325	2.60	5325	2.25	4450	1.45	2805	2.94	6260	3.43	7722	4.42	11304	4.21	10488	5.4	15425
30,	8.2	29240	------	------	8.0	28200	5.3	14985	2.45	4950	2.20	4325	1.35	2618	7.44	25303	3.93	9455	4.12	10150	4.21	10488	5.6	16375
31,	7.2	24115	------	------	7.3	24610	------	------	2.40	4825	------	------	1.35	2618	6.84	22349	------	------	3.92	9420	------	------	5.3	14985

Note.—Owing to a questionable error in gage heights, discharge is somewhat greater during certain periods of the year as compared with other stations in this drainage **basin**.

ESTIMATED MONTHLY DISCHARGE OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

(Drainage Area 5680 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1895.					
March,	42100	10450	20157	3.549	4.092
April,	52300	4325	19228	3.385	3.777
May,	10830	3095	5365	.945	1.090
June,	19260	525	3303	.582	.649
July,	11620	410	2798	.493	.568
August,	3490	410	1688	.297	.342
September,	3490	410	825	.145	.162
October,	700	410	494	.087	.100
November,	6710	410	1233	.217	.242
December,	23125	525	4333	.763	.880
1896.					
January,	22155	2525	5550	.977	1.126
February,	43960	2900	10512	1.851	1.996
March,	68000	3905	13307	2.343	2.701
April,	60200	8650	19403	3.416	3.812
May	7960	1970	3681	.648	.747
June,	23125	2340	7331	1.291	1.440
July,	22155	3095	6123	1.078	1.243
August,	22640	1055	6225	1.096	1.264
September,	3905	700	1342	.236	.264
October,	43960	1420	12605	2.219	2.558
November,	25600	4115	8634	1.520	1.696
December,	13700	2525	6113	1.076	1.241
The year,	68000	700	8402	1.479	20.088
1897.					
January,	9350	2710	4786	.843	.972
February,	32405	2900	9300	1.637	1.705
March,	47240	6710	24463	4.307	4.965
April,	32405	5600	13632	2.400	2.678
May,	32405	3905	14057	2.475	2.854
June	4825	1970	2874	.506	.565
July,	12850	1420	3257	.573	.661
August,	7960	1605	3507	.617	.711
September,	4825	440	1483	.261	.291
October,	1785	700	1057	.186	.215
November,	16850	875	6595	1.161	1.295
December,	26640	3905	11385	2.004	2.310
The year,	47240	440	8033	1.414	19.222
1898.					
January,	38535	3290	15242	2.684	3.094
February,	30280	4115	12053	2.122	2.210
March,	142375	5875	28900	5.088	5.866
April,	31870	5600	12645	2.226	2.484
May,	19740	6150	10504	1.849	2.132
June,	7960	1970	4120	.725	.809
July	3905	1055	1867	.329	.379
August,	22155	1785	4309	.759	.875
September,	2155	875	1323	.333	.260
October,	33475	1055	7107	1.251	1.442
November,	35715	3490	8278	1.457	1.626
December,	29760	2525	7410	1.305	1.505
The year,	142375	875	9480	1.669	22.682

ESTIMATED MONTHLY DISCHARGE OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

(Drainage Area 5680 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean	Second-feet per square mile.	Depth in inches.
a1899.					
January,	28200		11945	2.103	2.425
February,	29760		9105	1.603	1.669
March,	61040		26308	4.632	5.340
April,	27160		15542	2.736	3.053
May,	24610		7320	1.289	1.486
June,	4825		2543	.448	.500
July,	3290		1552	.273	.315
August,	5075		1090	.192	.221
September	2900		1634	.288	.322
October,	1055		746	.131	.151
November,	9000		5587	.984	1.098
December,	25600		9173	1.615	1.862
The year,	61040		7712	1.358	18.442
b1900.					
January,	60200	5075	13186	2.321	2.676
February,	37970	5875	13780	2.426	2.526
March,	45200	5075	15650	2.755	3.176
April,	22640	8300	13986	2.462	2.747
May,	9700	3290	4760	.838	.966
June,	7960	1605	3874	.682	.761
July,	3290	1055	1866	.329	.379
August,	1970	440	1075	.189	.218
September,	1605	423	662	.117	.131
October,	3490	440	1616	.285	.329
November	98000	1420	8525	1.501	1.675
December,	24115	3490	8443	1.486	1.713
The year,	98000	423	7285	1.283	17.297
1901.					
January,	11620	1970	5037	0.887	1.023
February,	5075	1785	2835	.499	.520
March,	46560	1785	19923	3.506	4.042
April,	80020	9700	25909	4.561	5.089
May,	68900	3490	14619	2.574	2.967
June,	37970	5325	12130	2.136	2.383
July	6710	1420	2736	0.482	.555
August,	27160	1420	6907	1.216	1.402
September,	22155	2340	6146	1.082	1.207
October,	3905	1235	1941	.342	.394
November,	21670	875	4098	.721	.804
December,	132672	3490	18856	3.320	3.828
The year,	132672	875	10095	1.777	24.214
1902.					
January,	21670	3095	6967	1.227	1.415
February,	44518	3490	8225	1.448	1.508
March,	143550	8650	36309	6.392	7.369
April,	93920	4575	18958	3.338	3.724
May,	7620	2710	4541	.799	.921
June,	10830	1970	3250	.572	.638
July,	43960	6710	19557	3.443	3.969
August,	13700	875	4727	.832	.959
September,	5875	525	1487	.262	.292
October,	10075	1785	3377	.594	.685
November,	3695	1605	2288	.403	.449
December,	43340	1970	12095	2.129	2.455
The year,	143550	525	10148	1.787	24.384

a Low-water gage heights unreliable. Minimums not available.
b Low-water gage heights unreliable.

ESTIMATED MONTHLY DISCHARGE OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

(Drainage area 5680 square miles).

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1903.					
January,	45200	4325	9710	1.710	1.971
February,	87900	8300	24508	4.315	4.494
March,	98728	11225	32769	5.769	6.651
April,	50080	5600	17236	3.035	3.387
May,	4825	1785	2765	.487	.561
June,	34590	1235	7714	1.358	1.515
July	28200	3905	9637	1.697	1.956
August,	24115	2710	5854	1.031	1.188
September,	17325	2155	5746	1.012	1.129
October,	27160	1785	8185	1.441	1.661
November,	52200	2340	8326	1.466	1.636
December,	4825	1970	3347	.589	.679
The year,	98728	1235	11316	1.993	26.828
1904.					
January,	62720	2710	8890	1.565	1.805
February,	42100	4825	10055	1.770	1.909
March,	108400	5600	34347	6.047	6.971
April,	95960	7000	22653	3.988	4.450
May,	27160	5075	11945	2.103	2.425
June,	18780	3290	7037	1.239	1.382
July,	28720	1970	6039	1.063	1.226
August,	2340	700	1333	.235	.271
September,	2155	525	917	.161	.180
October,	3290	1055	2129	.375	.433
November,	1970	1055	1456	.256	.286
December,	15900	525	2158	.380	.438
The year,	108400	525	9080	1.598	21.776
1905.					
January,	37405	5600	13991	2.463	2.840
February,	6150	3290	4169	.734	.764
March,	112720	4325	29365	5.170	5.960
April,	19740	7300	11349	1.998	2.229
May,	10450	3490	5877	1.035	1.193
June,	18300	3095	8198	1.443	1.611
July,	20700	3095	5476	.964	1.111
August,	17810	2525	5865	1.033	1.191
September,	7960	1605	3511	.618	.690
October.	21185	1420	6434	1.133	1.306
November,	25105	3095	5408	.951	1.061
December	95960	3905	18326	3.227	3.720
The year,	112720	1420	9831	1.730	23.676
1906.					
January,	47920	5600	14075	2.478	2.857
February,	8650	2340	4096	.721	.751
March,	52940	2340	7484	1.318	1.520
April,	43960	6710	22049	3.882	4.331
May,	29760	3290	7507	1.322	1.524
June,	14550	2340	5171	.911	1.016
July,	7960	875	2516	.443	.511
August,	16850	2155	4759	.838	.966
September,	5600	1420	2359	.415	.463
October,	16850	1605	4390	.773	.891
November,	9350	3095	4065	.874	.975
December,	14450	8095	6920	1.218	1.405
The year	47920	875	7191	1.266	17.210

ESTIMATED MONTHLY DISCHARGE OF WEST BRANCH SUSQUEHANNA RIVER, AT WILLIAMSPORT, LYCOMING COUNTY, PA.

(Drainage area 5680 square miles).

MONTH.	Discharge in Second-feet.			Run off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1907.					
January,	45200	7300	20262	3.567	4.112
February,	7960	2900	4852	.854	.889
March,	94940	3095	24350	4.287	4.942
April,	25600	4575	9301	1.638	1.828
May,	17810	4115	8814	1.552	1.789
June,	17810	3695	7934	1.397	1.559
July,	17810	1785	5185	.913	1.053
August,	1785	753	1116	.196	.226
September,	4325	753	1884	.332	.370
October,	7000	1785	3275	.577	.665
November,	14985	3490	7043	1.240	1.383
December,	39100	2710	12010	2.114	2.437
The year,	94940	753	8836	1.556	21.253
1908.					
January,	33475	4575	11215	1.974	2.276
February,	98000	4115	14010	2.467	2.661
March,	102160	4825	37747	6.646	7.662
April,	29760	7000	15001	2.641	2.946
May,	44580	9700	24870	4.379	5.049
June,	24610	1785	5751	1.013	1.130
July,	5075	875	2088	.368	.425
August,	2710	1055	1521	.268	.309
September,	1055	525	636	.112	.125
October,	2710	700	1009	.178	.206
November,	1235	875	1019	.179	.200
December,	5000	875	1559	.274	.316
The year,	102160	525	9702	1.708	23.305
1909.					
January,	43960	2525	9278	1.633	1.883
February,	73450	3490	23557	4.147	4.318
March,	23125	5325	12303	2.166	2.497
April,	54640	7960	18009	3.171	3.538
May,	142375	3905	21782	3.835	4.422
June,	20220	4115	8676	1.527	1.704
July,	4575	1055	1930	.340	.392
August,	1235	700	911	.160	.184
September,	875	525	630	.111	.124
October,	1420	525	896	.158	.182
November,	1055	525	753	.132	.148
December,	4575	525	1524	.268	.309
The year,	142375	525	8354	1.471	19.701
1910.					
January,	56200	875	8962	1.578	1.820
February,	56200	2900	6939	1.222	1.272
March,	91900	8650	31144	5.483	6.321
April,	101120	2525	18658	3.285	3.665
May,	18300	3695	8518	1.500	1.729
June,	12275	2710	6829	1.202	1.341
July,	2525	875	1653	.291	.335
August,	875	525	649	.114	.131
September,	3905	525	1594	.281	.313
October,	2710	700	1019	.179	.207
November,	2710	875	1160	.204	.227
December,	5325	1055	1731	.305	.352
The year,	101120	525	7405	1.304	17.713

ESTIMATED MONTHLY DISCHARGE OF WEST BRANCH SUSQUEHANNA RIVER AT WILLIAMSPORT, LYCOMING CO.

(Drainage area 5680 square miles).

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1911.					
January,	82900	6425	18873	3.32	3.828
February,	22155	6425	11422	2.01	2.093
March,	34035	7300	13426	2.36	2.721
April,	35715	10450	22473	3.96	4.418
May,	15205	4825	7821	1.38	1.591
June,	15662	4325	6800	1.20	1.339
July,	4220	2432	3011	0.53	0.611
August,	25303	2509	4548	0.80	0.922
September,	46084	5958	13084	2.34	2.611
October,	87100	9420	20841	3.67	4.231
November,	18348	6178	11025	1.94	2.164
December	38535	7960	15836	2.79	3.217
The year,	87100	2432	12430	2.19	29.746

LOYALSOCK CREEK.

DESCRIPTION OF BASIN.

Loyalsock creek, a tributary of the West Branch of the Susquehanna river, drains an area of approximately 495 square miles in Bradford, Wyoming, Sullivan and Lycoming counties. Rising in many swamps in the western part of Wyoming county, this stream flows southwesterly through a wild, rugged and sparsely inhabited country, except on the plateaus where some farming is carried on, through Sullivan county into Lycoming county, to its mouth at Montoursville, a total distance of about 60 miles. This entire stream, except for a short distance above its mouth, is steep and rapid, flowing through narrow valleys with steep, precipitous sides, with frequent low falls along its course. All but a small section of this basin near the mouth lies within the glacial area, and many of the numerous tributaries rise in lakes or swamps, the most important tributary being Little Loyalsock creek. There are a few small boroughs and farming villages on the watershed, but the stream is not used for water supply and but little for water power.

The mean annual precipitation over this watershed is from 40 to 45 inches.

The discharge of this stream has been measured since July 17, 1908, near the headwaters, at Forksville, Sullivan county.

SUSQUEHANNA BASIN—STATION No. 15.

LOYALSOCK CREEK AT FORKSVILLE.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania on July 17, 1908 at a single span, wooden covered highway bridge at Forksville, Sullivan county.

The channel above the station is straight for 300 feet, while below it is straight for 200 feet. The right bank is high and does not overflow, and the left bank overflows only during extreme high stages. The bed is of rocks and gravel.

Discharge measurements are made by wading either above or below the bridge.

A standard chain gage is attached to the bridge. The length of chain from bottom of weight to center of marker is 21.88 feet. The elevation of zero is arbitrary datum. Bench mark No. 1 is corner of stone on left abutment, downstream corner, 10th course down under seat of arch haunch, 2nd course up from ground, elevation 4.13 ft. above zero of gage. Bench mark No. 2 is corner of stone on left abutment, upstream corner, 7th course down from seat of arch haunch, 7th course up from bottom, close to iron hitching ring for boats on end of old retaining wall log, elevation 6.387 ft. above zero of gage. The gage is read twice daily by B. W. Fawcett.

A dam crosses the creek about 100 feet below the bridge, but does not influence the gage readings. Little Loyalsock creek enters about 800 feet downstream.

Since the establishment of this station, 3 discharge measurements have been made. Owing to the insufficient number of discharge measurements, no rating curve has been computed, and only the discharge measurements and daily gage heights have been published.

DISCHARGE MEASUREMENTS OF LOYALSOCK CREEK, AT FORKSVILLE, SULLIVAN COUNTY, PA.

(Drainage Area 150 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean Velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1908.							
1	July 17,	Grant.	53	65	0.71	2.30	46.7	Wading measurement 1500 feet above bridge.
2	Aug. 13,	do.	47	48	0.81	2.20	39	Wading measurement 1500 feet above bridge.
	1909.							
3	Aug. 9,	do.	34	29	0.57	1.82	16.3	Wading measurement 100 feet above junction of Little Loyalsock creek.

DAILY MEAN GAGE HEIGHTS OF LOYALSOCK CREEK, AT FORKSVILLE, SULLIVAN COUNTY, PA.

1908. Day.	JULY.	AUGUST.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.
	G H	G H	G H	G H	G H	G H
1,	------	2.40	2.15	2.20	2.35	2.00
2,	------	2.30	2.15	2.20	2.32	2.00
3,	------	2.28	2.15	2.15	2.30	2.00
4,	------	2.18	2.15	2.10	2.28	2.00
5,	------	2.40	2.15	2.10	2.25	2.00
6,	------	2.42	2.15	2.10	2.25	2.00
7,	------	2.39	2.15	2.00	2.30	2.20
8	------	2.52	2.10	2.00	2.25	2.50
9,	------	2.38	2.10	2.00	2.25	2.50
10	------	2.30	2.10	2.00	2.25	2.45
11,	------	2.28	2.10	2.55	2.28	2.40
12,	------	2.22	2.10	2.35	2.45	2.38
13,	------	2.20	2.10	2.28	2.28	2.35
14,	------	2.05	2.10	2.25	2.20	2.35
15,	------	2.15	2.10	2.20	2.18	2.35
16,	------	2.20	2.10	2.20	2.20	2.35
17,	------	2.55	2.10	2.15	2.32	2.35
18,	2.32	2.60	2.10	2.10	2.38	2.35
19,	2.38	2.30	2.10	2.10	2.32	2.35
20,	2.30	2.22	2.10	2.05	2.30	2.35
21,	2.32	2.15	2.10	2.05	2.28	2.30
22,	2.99	2.20	2.10	2.05	2.25	2.30
23.	2.66	2.45	2.05	2.05	2.25	2.30
24,	2.36	2.30	2.00	2.25	2.25	2.25
25	2.85	2.25	2.00	2.38	2.25	2.25
26,	2.58	2.20	*2.00	2.80	2.25	2.25
27	2.48	2.19	2.00	2.95	2.25	2.25
28,	2.40	2.18	2.00	2.85	2.25	2.25
29,	2.32	2.15	2.75	2.90	2.25	2.25
30,	2.30	2.18	2.35	2.75	2.15	2.25
31,	2.29	2.15	-----	2.50	------	2.25

*Interpolated.

DAILY MEAN GAGE HEIGHTS OF LOYALSOCK CREEK, AT FORKSVILLE, SULLIVAN COUNTY, PA.

1909. Day.	JANUARY.	FEBRUARY.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.
	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H
1,	2.25	2.80	2.95	2.95	5.17	2.43	2.45	1.97	1.73	1.81	1.93	2.35
2,	2.25	2.80	2.85	2.90	4.15	2.35	2.40	1.95	1.73	1.79	1.97	2.26
3,	2.20	2.80	2.80	3.00	3.60	2.35	2.37	1.90	1.71	1.78	1.91	2.23
4,	2.65	2.80	2.78	2.90	3.78	2.57	2.34	1.90	1.70	1.78	1.90	2.08
5,	3.40	2.90	2.85	2.90	3.40	5.00	2.25	1.90	1.70	1.73	1.83	2.54
6,	4.45	3.60	2.75	3.00	3.20	3.63	2.30	1.85	1.71	1.77	1.93	2.17
7,	3.45	3.20	2.68	3.05	2.98	3.35	2.25	1.85	1.73	1.75	1.95	2.08
8,	3.00	3.00	2.62	2.93	2.97	2.90	2.25	1.85	1.71	1.75	1.94	2.07
9,	3.00	2.75	2.70	2.78	2.82	2.85	2.20	1.84	1.70	1.77	1.99	1.92
10,	2.95	3.52	3.50	2.77	2.80	2.95	2.15	1.85	1.79	1.72	1.90	1.89
11,	2.80	3.35	3.55	2.70	3.10	2.93	2.15	1.85	1.86	1.91	1.89	1.85
12,	2.80	3.15	3.35	2.68	2.88	2.77	2.15	1.83	1.84	2.73	1.93	1.75
13,	2.80	2.95	3.15	5.00	2.85	2.73	2.10	1.79	1.79	2.35	1.90	1.95
14,	2.75	2.95	2.75	4.45	2.85	3.40	2.10	1.79	1.75	2.17	1.90	3.85
15,	2.70	3.50	2.78	4.05	2.90	3.02	2.00	1.80	1.74	2.02	1.84	3.00
16,	2.65	3.40	2.65	3.83	2.93	2.85	2.05	1.84	1.75	2.03	1.89	2.77
17,	2.65	4.00	2.65	3.38	2.75	2.80	2.05	1.97	1.97	1.97	1.91	2.64
18,	2.65	3.30	2.62	3.17	2.70	3.37	2.00	2.05	1.87	1.92	1.97	2.53
19,	2.62	3.10	2.58	3.00	2.55	2.97	2.00	1.97	1.83	1.91	1.98	2.39
20,	2.70	5.35	2.65	3.05	2.55	2.72	1.95	1.93	1.80	1.83	1.91	2.40
21,	2.60	3.70	2.48	3.05	2.55	2.67	1.95	1.90	1.80	1.91	1.93	2.36
22,	2.90	3.35	2.40	3.00	2.55	2.57	1.95	1.87	1.75	2.01	1.95	2.30
23,	3.00	3.40	2.42	3.05	2.55	2.53	2.10	1.82	1.73	2.15	2.05	2.40
24,	3.55	4.20	2.45	3.00	2.45	2.50	2.23	1.79	2.00	2.47	2.07	2.34
25,	3.82	4.08	3.38	3.00	2.47	2.40	2.15	1.78	2.04	2.15	1.96	2.35
26,	3.70	3.30	3.55	2.97	2.45	3.43	2.10	1.77	1.87	2.09	2.00	2.31
27,	3.10	3.20	3.05	2.82	2.40	2.80	2.13	1.80	1.83	2.05	1.94	2.25
28,	2.92	3.12	3.10	3.03	2.63	2.83	2.10	1.77	1.83	2.00	1.90	2.28
29,	2.85	------	3.10	3.45	2.62	2.75	2.05	1.75	1.80	1.97	1.97	2.18
30,	2.90	------	3.35	4.60	2.53	2.52	1.98	1.76	1.80	1.90	1.96	2.15
31,	2.8	------	2.92	------	2.40	------	2.07	1.75	------	1.93	------	2.10

DAILY MEAN GAGE HEIGHTS OF LOYALSOCK CREEK, AT FORKSVILLE, SULLIVAN COUNTY, PA.

1910. Day.	JANUARY.	FEBRUARY.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.
	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H
1,	2.17	2.60	4.60	2.46	2.75	2.36	2.02	1.42	1.36	1.62	1.62	1.98
2,	2.08	2.68	4.55	2.42	2.58	2.34	1.96	1.48	1.41	1.52	1.60	1.96
3,	2.05	2.62	4.15	2.36	2.49	2.38	1.91	1.50	1.62	1.48	1.58	1.95
4,	1.95	2.55	3.80	2.32	2.56	2.32	1.88	1.48	2.05	1.45	1.60	1.94
5,	1.97	2.70	3.72	2.29	2.42	2.24	1.82	1.44	1.78	1.41	1.62	1.92
6,	2.25	2.68	3.58	2.24	2.38	2.38	1.80	1.40	1.69	1.42	1.75	1.90
7,	2.25	2.66	3.90	2.20	2.30	2.24	1.80	1.39	1.64	1.45	1.72	1.88
8,	2.30	2.58	3.58	2.19	2.24	2.18	1.76	1.39	1.56	1.45	1.70	1.84
9,	2.20	2.50	3.15	2.16	2.55	2.15	1.74	1.44	1.51	1.43	1.69	1.79
10,	2.20	2.55	3.02	2.24	2.70	2.22	1.70	1.59	1.46	1.42	1.70	1.76
11,	2.20	2.40	2.86	2.10	2.45	2.52	1.70	1.56	1.45	1.42	1.75	1.75
12,	2.10	2.40	2.72	2.14	2.36	2.55	1.74	1.50	1.45	1.40	1.68	1.72
13,	2.10	2.35	2.64	2.14	2.30	2.49	1.79	1.48	1.42	1.40	1.61	1.71
14,	2.02	2.35	2.65	2.09	2.25	2.38	1.72	1.45	1.46	1.38	1.59	1.69
15,	2.03	2.45	2.78	2.05	2.20	2.28	1.69	1.44	1.50	1.41	1.54	1.65
16,	1.97	2.40	2.64	2.06	2.16	2.46	1.69	1.44	1.48	1.42	1.48	1.61
17,	1.88	2.40	2.60	2.12	2.14	4.75	1.72	1.43	1.45	1.45	1.49	1.60
18,	1.97	2.35	2.55	2.54	2.18	3.50	1.66	1.48	1.42	1.48	1.58	1.58
19,	2.55	2.30	2.52	2.90	2.16	3.05	1.62	1.74	1.41	1.45	1.59	1.58
20,	2.45	2.35	2.90	3.48	2.28	2.78	1.60	1.66	1.40	1.45	1.68	1.55
21,	3.35	2.40	2.96	3.25	2.40	2.60	1.56	1.60	1.39	1.46	1.72	1.56
22,	4.90	2.82	2.89	3.02	2.24	2.50	1.55	1.54	1.38	1.51	1.76	1.60
23,	3.85	2.80	2.92	2.79	2.14	2.39	1.52	1.49	1.35	1.56	1.79	1.68
24,	3.35	2.62	3.02	3.48	2.18	2.28	1.50	1.45	1.38	1.58	1.84	1.78
25,	2.97	2.55	3.09	5.15	3.28	2.24	1.48	1.43	1.46	1.59	1.89	1.80
26,	2.87	2.50	2.84	3.45	3.40	2.19	1.46	1.43	1.52	1.61	1.90	1.72
27,	2.75	3.18	2.78	3.15	3.08	2.15	1.44	1.40	1.66	1.66	1.94	1.68
28,	2.75	4.75	2.68	2.85	2.80	2.18	1.44	1.38	1.84	1.69	1.96	1.75
29,	2.62	------	2.64	2.75	2.62	2.15	1.44	1.36	1.79	1.65	2.00	2.28
30,	2.57	------	2.58	3.08	2.62	2.12	1.42	1.35	1.72	1.65	2.00	3.10
31,	2.50	------	2.60	------	2.42	------	1.40	1.34	------	1.62	------	2.82

DAILY MEAN GAGE HEIGHTS OF LOYALSOCK CREEK, AT FORKSVILLE, SULLIVAN COUNTY, PA.

1911.	JANUARY.	FEBRUARY.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.
	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H
1,	2.68	2.42	1.82	2.62	2.16	1.89	1.50	1.40	2.15	1.94	2.16	2.14
2,	3.42	2.34	1.84	2.52	2.4[illegible]	1.82	1.46	1.38	1.92	2.65	2.12	2.10
3,	4.02	2.28	1.80	2.50	2.3[illegible]	1.76	1.45	1.72	1.75	2.58	2.09	2.09
4,	3.02	2.14	1.75	2.70	2.22	1.71	1.44	1.69	1.71	2.54	2.04	2.05
5,	2.72	2.08	1.70	3.62	2.12	1.70	1.42	1.62	1.70	2.48	2.00	2.00
6,	2.58	2.04	1.65	3.15	2.06	2.05	1.40	1.58	2.80	2.41	2.24	1.94
7,	2.48	1.98	1.68	2.98	2.04	1.92	1.39	1.49	2.32	2.39	2.68	1.89
8,	2.38	1.94	1.74	2.88	2.00	1.82	1.36	1.45	2.25	2.32	2.39	1.85
9,	2.25	1.88	1.76	2.80	1.96	1.74	1.36	1.44	3.50	2.22	2.32	1.86
10,	2.20	1.80	1.82	2.68	1.95	1.66	1.38	1.40	3.10	2.12	2.24	1.90
11,	2.28	1.75	1.88	2.64	1.92	1.65	1.39	1.36	2.70	2.06	2.18	1.94
12,	2.38	1.72	1.94	2.60	1.89	1.78	1.39	1.28	2.40	2.08	2.14	2.02
13,	2.45	1.70	1.98	2.56	1.86	2.30	1.36	1.25	2.24	2.02	2.14	2.05
14,	2.72	1.72	2.12	2.60	1.83	2.28	1.35	1.25	2.12	1.99	2.10	2.10
15,	3.08	1.75	2.30	2.75	1.80	2.15	1.31	1.25	2.04	1.92	2.12	2.25
16,	2.82	1.73	2.35	2.66	1.78	2.00	1.30	1.32	2.00	1.89	2.09	2.65
17,	2.72	1.76	2.30	2.58	1.75	1.88	1.42	1.34	1.94	1.95	2.05	2.52
18,	2.55	1.82	2.26	2.55	1.79	1.76	1.44	1.34	1.86	3.28	2.48	2.42
19,	2.38	1.80	2.28	3.40	1.79	1.74	1.40	1.45	1.80	2.75	2.38	2.34
20,	2.28	1.75	2.26	3.05	1.76	1.69	1.38	1.44	1.76	2.58	2.29	2.28
21,	2.20	1.71	2.25	2.82	1.75	1.65	1.49	1.38	1.74	2.48	2.25	2.20
22,	2.12	1.68	2.32	2.78	1.72	1.62	1.45	1.30	1.71	2.45	2.22	2.22
23,	2.10	1.61	2.34	2.72	1.70	1.60	1.45	1.29	1.68	2.90	2.16	2.82
24,	2.05	1.60	2.26	2.66	1.92	1.64	1.43	1.30	1.65	2.55	2.14	2.72
25,	2.02	1.64	2.28	2.62	1.88	1.64	1.42	1.78	1.64	2.42	2.10	2.58
26,	2.02	1.68	2.40	2.52	1.80	1.62	1.40	1.82	1.62	2.36	2.06	2.48
27,	2.08	1.75	4.08	2.42	1.72	1.60	1.38	1.60	1.59	2.32	2.03	2.38
28,	2.25	1.79	3.52	2.32	1.69	1.58	1.34	1.68	1.65	2.26	2.12	2.28
29,	2.55	------	2.95	2.24	1.64	1.54	1.31	2.95	1.78	2.22	2.22	2.18
30,	2.55	------	2.82	2.20	1.59	1.51	1.30	2.50	1.86	2.15	2.15	2.15
31,	2.50	------	2.70	------	1.60	------	1.30	2.30	------	2.18	------	2.14

SUSQUEHANNA BASIN—STATION NO. 16.

WEST BRANCH SUSQUEHANNA RIVER AT ALLENWOOD, PA.

DESCRIPTION OF STATION.

This station, established March 25, 1899, by the United States Geological Survey, is located on the highway bridge, one-quarter of a mile east of the railroad station, at Allenwood. This station was discontinued in April, 1902, the station at Williamsport taking its place.

The channel is straight for one-half mile above and below the station. The banks are low and subject to overflow at time of high water. The bed of the stream is rocky and permanent. The current is sluggish, but unobstructed.

Discharge measurements are made from the above highway bridge, the initial point for soundings being the end of the iron guard rail on the right bank.

The wire gage is 42.15 feet from zero to the end of the weight, and is referred to a pine-board scale fastened to iron work of the bridge and divided into feet and tenths. A bench mark was established on September 24th, 1900, and consists of a copper bolt set in the capstone of the wing-wall on the lower side of the west end of the bridge, and is 33.19 feet above datum of the gage.

The data published for this station is based upon two rating curves, each one having been modified as additional meter measurements were obtained.

During the period in which this station was in operation ten discharge measurements were made.

The following data have been furnished by the United States Geological Survey:

DISCHARGE MEASUREMENTS OF WEST BRANCH SUSQUEHANNA RIVER AT ALLENWOOD, PA.

(Drainage area 6538 square miles.)

No.	Date.	Hydrographer	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	**Feet.**	**Sec.-ft.**	
	1899.							
1.	Mar. 24,	Paul,	------	7,885	4.06	7.00	32,031	
2.	June 8,	do	------	3,367	1.18	3.00	3,988	
3.	July 28,	do	------	2,625	.52	2.05	1,360	
4.	Sept. 15,	do	------	2,437	.51	1.90	1,234	
5.	Oct. 17,	do	------	2,137	.39	1.70	842	
	1900.							
6.	May 18,	Paul,	------	3,729	1.29	3.20	4,812	
7.	Sept. 24,	do	------	327	1.56	1.30	511	
	1901.							
8.	Aug. 17,	Paul,	------	4,460	1.99	4.10	8,857	
9.	Oct. 26,	do	------	2,824	.81	2.30	2,308	
	1902.							
10.	April 21,	Paul,	------	4,736	2.09	4.40	9,896	

DISCHARGE TABLE FOR WEST BRANCH SUSQUEHANNA RIVER AT ALLENWOOD, PA., FOR 1900.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.20	300	3.00	4000	.80	30250	.40	56250	.50	106625
.40	500	.20	5200	5.00	33500	.60	59500	10.00	114750
.60	750	.40	7500	.20	36750	.80	62750	.50	122875
.80	1050	.60	10750	.40	40000	7.00	66000	11.00	131000
2.00	1350	.80	14000	.60	43250	.50	74125	.50	139125
.20	1700	4.00	17250	.80	46500	8.00	82250	12.00	147250
.40	2150	.20	20500	6.00	49750	.50	90375	.50	155375
.60	2650	.40	23750	.20	53000	9.00	98500	13.00	163500
.80	3250	.60	27000						

DISCHARGE TABLE FOR WEST BRANCH SUSQUEHANNA RIVER AT ALLENWOOD, PA., FROM 1900 to 1902.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.20	430	.90	3730	.70	11930	.50	26900	.60	65700
.30	510	3.00	4050	.80	12600	.60	27900	.80	68800
.40	600	.10	4400	.90	13300	.70	28900	10.00	72000
.50	690	.20	4770	5.00	14030	.80	29900	.20	75300
.60	790	.30	5150	.10	14780	.90	31000	.40	78600
.70	900	.40	5550	.20	15550	7.00	32000	.60	82000
.80	1040	.50	5970	.30	16350	.20	34200	.80	85500
.90	1220	.60	6400	.40	17170	.40	36500	11.00	89000
2.00	1410	.70	6830	.50	17990	.60	38800	.20	92600
.10	1610	.80	7260	.60	18820	.80	41200	.40	96300
.20	1830	.90	7700	.70	19650	8.00	43600	.60	100000
.30	2070	4.00	8160	.80	20500	.20	46100	.80	103800
.40	2320	.10	8630	.90	21350	.40	48700	12.00	107600
.50	2580	.20	9110	6.00	22200	.60	51400	.20	111500
.60	2850	.30	9610	.10	23100	.80	54100	.40	115500
.70	3130	.40	10140	.20	24000	9.00	56900	.60	119500
.80	3420	.50	10710	.30	24900	.20	59800	.80	123700
		.60	11300	.40	25900	.40	62700	13.00	128000

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT ALLENWOOD, PA.

1899.	MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,			6.70	28900	3.80	7260	3.50	5970	2.90	3730	2.00	1410	2.70	3130	2.00	1410	2.20	1830	2.90	3730
2,			6.30	24900	3.80	7260	3.50	5970	2.70	3130	2.00	1410	2.70	3130	2.00	1410	3.60	6400	2.80	3420
3,			5.80	20500	3.80	7260	3.40	5550	2.50	2580	2.00	1410	2.70	3130	1.90	1220	4.20	9110	2.70	3130
4,			5.35	16760	3.90	7700	3.40	5550	2.50	2580	1.80	1040	2.50	2580	1.90	1220	5.20	15550	2.70	3130
5,			5.05	14400	3.80	7260	3.30	5150	2.40	2320	1.70	900	2.40	2320	1.90	1220	4.60	11300	2.70	3130
6,			4.90	13300	3.60	6400	3.20	4770	2.40	2320	1.70	900	2.30	2070	1.90	1220	4.00	8160	2.60	2850
7,			4.80	12600	3.50	5970	3.00	4050	2.30	2070	1.70	900	2.10	1610	1.90	1220	3.40	5550	2.60	2850
8,			6.45	26400	3.30	5150	3.00	4050	2.40	2320	1.70	900	2.00	1410	1.90	1220	3.20	4770	2.60	2850
9,			7.80	41200	3.40	5550	2.90	3730	2.20	1830	1.70	900	2.00	1410	1.90	1220	3.00	4050	2.60	2850
10,			7.40	36500	3.50	5970	2.90	3730	2.00	1410	1.70	900	2.00	1410	1.80	1040	3.00	4050	2.60	2850
11,			6.60	27900	3.60	6400	2.70	3130	2.10	1610	1.70	900	1.90	1220	1.80	1040	3.00	4050	2.60	2850
12,			6.20	24000	3.70	6830	2.60	2850	2.30	2070	1.70	900	1.90	1220	1.80	1040	3.20	4770	5.30	16350
13,			6.50	26900	3.50	5970	2.60	2850	2.20	1830	1.90	1220	1.90	1220	1.70	900	3.30	5150	8.40	48700
14,			7.00	32000	3.40	5550	2.60	2850	2.20	1830	1.90	1220	1.90	1220	1.70	900	3.40	5550	7.40	36500
15,			6.90	31000	3.30	5150	2.50	2580	2.30	2070	1.90	1220	1.90	1220	1.70	900	3.50	5970	6.50	26900
16,			6.80	29900	3.20	4700	2.50	2580	2.20	1830	1.90	1220	1.90	1220	1.70	900	3.60	6400	5.80	20500
17,			6.40	25900	3.40	5550	2.50	2580	2.30	2070	1.90	1220	1.90	1220	1.70	900	3.80	7260	5.10	14780
18,			5.60	18820	3.80	7260	2.40	2320	2.40	2320	1.90	1220	1.90	1220	1.70	900	3.90	7700	4.90	13300
19,			5.40	17170	7.40	36500	2.40	2320	2.60	2850	1.80	1040	1.90	1220	1.70	900	4.10	8630	4.80	12600
20,			5.00	14030	6.50	26900	2.40	2320	2.80	3420	1.70	900	1.90	1220	1.70	900	4.30	9610	4.70	11930
21,			4.80	12600	5.75	20075	2.40	2320	3.00	4050	1.70	900	1.90	1220	1.60	790	4.10	8630	4.30	9610
22,			4.70	11930	5.15	15160	2.30	2070	2.70	3130	1.70	900	1.90	1220	1.60	790	4.00	8160	4.20	9110
23,	7.00	32000	4.50	10710	4.70	11930	2.20	1830	2.50	2580	1.70	900	1.90	1220	1.60	790	3.90	7700	4.20	9110
24,	7.00	32000	4.40	10140	4.35	9870	2.20	1830	2.30	2070	1.60	790	1.90	1220	1.60	790	3.80	7260	5.15	15160
25,	6.70	28900	4.30	9610	4.00	8160	2.80	3420	2.20	1830	1.60	790	1.90	1220	1.60	790	3.70	6830	7.25	34700
26,	6.30	24900	4.30	9610	3.80	7260	2.50	2580	2.20	1830	1.60	790	1.90	1220	1.60	790	3.60	6400	5.60	18820
27,	6.40	25900	4.30	9610	3.60	6400	2.60	2850	2.10	1610	1.70	900	2.00	1410	1.60	790	3.40	5550	5.00	14030
28,	6.20	24000	4.20	9110	3.50	5970	2.70	3130	2.00	1410	3.70	6830	2.00	1410	1.60	790	3.30	5150	4.50	10710
29,	6.70	28900	4.30	9610	3.40	5550	2.70	3130	1.90	1220	3.00	4050	2.00	1410	1.60	790	3.20	4770	4.10	8630
30,	7.80	41200	4.10	8630	3.40	5550	2.80	3420	1.80	1040	2.60	2850	2.00	1410	1.60	790	3.10	4400	3.60	6400
31,	7.35	35900			3.50	5970			2.00	1410	2.60	2850			1.60	790			3.40	5550

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT ALLENWOOD, PA.

1900.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1.	4.50	10710	3.20	4770	7.55	38200	5.00	14030	4.30	9610	3.90	7700	2.10	1610	1.90	1220	2.00	1410	1.30	510	2.10	1610	5.75	20070
2.	5.50	17990	3.20	4770	9.60	65700	5.30	16350	4.20	9110	3.90	7700	2.30	2070	1.80	1040	1.90	1220	1.30	510	2.10	1610	5.40	17170
3.	5.70	19650	3.40	5550	7.70	40000	5.40	17170	4.20	9110	3.90	7700	2.60	2850	1.80	1040	1.90	1220	1.20	430	2.10	1610	5.00	14030
4	5.80	20500	3.40	5550	7.00	32000	5.80	20500	4.00	8160	4.00	8160	2.50	2580	1.80	1040	1.80	1040	1.20	430	2.10	1610	5.80	20500
5.	5.90	21350	3.50	5970	6.00	22200	5.90	21350	3.80	7260	4.10	8630	2.30	2070	1.70	900	1.80	1040	1.20	430	2.10	1610	5.90	21350
6	5.90	21350	3.60	6400	5.40	17170	6.20	24000	3.50	5970	3.90	7700	2.30	2070	1.70	900	1.70	900	1.20	430	2.00	1410	6.40	25900
7.	5.90	21350	3.80	7260	5.80	20500	6.40	25900	3.30	5150	3.60	6400	2.20	1830	1.70	900	1.70	900	1.20	430	1.90	1220	6.70	28900
8	4.70	11930	4.50	10710	5.90	21350	6.20	24000	3.30	5150	3.50	5970	2.20	1830	1.60	790	1.70	900	1.20	430	1.90	1220	6.00	22200
9	3.70	6830	5.00	14030	6.10	23100	7.30	35300	3.20	4770	3.40	5550	2.20	1830	1.60	790	1.60	790	1.80	1040	1.90	1220	5.50	17990
10.	3.90	7700	5.30	16350	6.40	25900	6.00	22200	3.20	4770	3.30	5150	2.30	2070	1.50	690	1.60	790	2.20	1830	1.90	1220	4.90	13300
11.	4.20	9190	5.60	18820	6.90	31000	5.70	19650	3.20	4770	3.20	4770	2.50	2580	1.40	600	1.60	790	2.20	1830	1.90	1220	4.60	11300
12.	4.50	10710	5.30	16350	6.20	24000	5.30	16350	3.20	4770	3.00	4050	2.70	3130	1.50	690	1.50	690	2.10	1610	1.90	1220	4.20	9110
13.	4.40	10140	6.00	22200	5.40	17170	4.90	13300	3.50	5970	3.00	4050	2.90	3730	1.50	690	1.50	690	2.10	1610	1.90	1220	4.00	8160
14.	4.20	9110	7.70	40000	5.00	14030	4.80	12600	3.40	5550	3.00	4050	2.80	3420	1.40	600	1.40	600	2.10	1610	1.90	1220	3.80	7260
15	4.00	8160	7.30	35300	4.00	8160	4.80	12600	3.40	5550	3.00	4050	2.60	2850	1.40	600	1.40	600	2.10	1610	1.90	1220	3.60	6400
16.	4.00	8160	6.50	26900	4.00	8160	4.60	11300	3.30	5150	3.00	4050	2.60	2850	1.40	600	1.40	600	2.10	1610	1.80	1040	3.30	5150
17.	4.00	8160	6.20	24000	3.90	7700	4.70	11930	3.20	4770	2.90	3730	2.50	2580	1.40	600	1.30	510	2.10	1610	1.80	1040	3.20	4770
18.	4.20	9110	5.40	17170	3.80	7260	6.00	22200	3.20	4770	2.80	3420	2.40	2320	1.40	600	1.30	510	2.20	1830	1.80	1040	3.20	4770
19.	4.50	10710	5.60	18820	3.70	6830	7.00	32000	3.50	5970	2.70	3130	2.20	1830	1.40	600	1.30	510	2.10	1610	1.70	900	3.10	4400
20.	5.30	16350	5.90	21350	6.20	24000	6.90	31000	3.50	5970	2.70	3130	2.00	1410	1.40	600	1.30	510	2.00	1410	1.70	900	3.10	4400
21.	13.20	132300	6.00	22200	7.10	33100	6.30	24900	3.30	5150	2.60	2850	2.00	1410	1.40	600	1.30	510	1.90	1220	1.70	900	3.10	4400
22.	12.20	111500	8.20	46100	6.90	31000	6.20	24000	3.20	4770	2.50	2580	1.90	1220	2.30	2070	1.30	510	1.90	1220	1.90	1220	3.00	4050
23.	8.50	50000	10.15	74500	6.60	27900	6.00	22200	3.00	4050	2.40	2320	1.90	1220	2.30	2070	1.30	510	2.10	1610	2.40	2320	3.00	4050
24.	6.50	26900	7.85	41800	6.10	23000	6.30	24900	3.00	4050	2.40	2320	1.90	1220	2.30	2070	1.30	510	2.20	1830	3.00	4050	3.00	4050
25.	6.30	24900	6.50	26900	5.90	21300	6.00	22200	3.00	4050	2.30	2070	1.90	1220	2.30	2070	1.30	510	2.10	2320	5.00	14030	3.00	4050
26.	6.10	23100	5.00	14030	5.50	17990	5.60	18820	3.00	4050	2.30	2070	1.90	1220	2.30	2070	1.30	510	2.50	2580	7.70	40000	3.00	4050
27	5.30	16350	5.00	14030	5.20	15550	5.30	16350	3.40	5550	2.30	2070	2.20	1830	2.20	1830	1.30	510	2.60	2850	15.75	193100	3.00	4050
28.	4.60	11300	4.80	12600	5.10	14780	4.80	12600	3.20	4770	2.20	1830	2.20	1830	2.20	1830	1.30	510	2.40	2320	10.05	72800	3.00	4050
29.	4.60	11300	----	----	5.00	14030	4.60	11300	3.00	4050	2.20	1830	2.20	1830	2.10	1610	1.30	510	2.40	2320	8.25	46750	3.00	4050
30.	4.50	10710	----	----	4.90	13300	4.40	10140	3.00	4050	2.10	1610	2.20	1830	2.10	1610	1.30	510	2.30	2070	6.60	27900	3.00	4050
31.	3.20	4770	----	----	4.80	12600	----	----	3.20	4770		----	2.00	1410	2.00	1410	----	----	2.20	1830	----	----	----	----

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT ALLENWOOD, PA,

1901.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.00	4050	2.50	2580	3.00	4050	5.80	20500	4.70	11930	8.50	50000	2.90	3730	2.50	2580	4.10	8630	3.30	5150	2.40	2320	4.00	8160
2,	3.00	4050	2.50	2580	3.00	4050	5.60	18820	4.60	11300	7.70	40000	2.90	3730	2.40	2320	4.20	9110	3.20	4770	2.60	2850	3.90	7700
3,	3.00	4050	2.50	2580	2.90	3750	5.20	15550	5.00	14030	7.20	34200	2.80	3420	2.40	2320	4.20	9110	3.10	4400	2.80	3420	3.70	6830
4,	3.00	4050	2.50	2580	3.00	4050	6.50	26900	5.20	15550	6.70	28900	2.80	3420	2.30	2070	4.30	9610	3.10	4400	3.00	4050	3.60	6400
5,	3.00	4050	2.60	2850	3.50	5970	6.80	29900	5.00	14030	5.70	19650	2.80	3420	2.20	1830	4.40	10140	3.00	4050	3.10	4400	3.40	5550
6,	2.80	3420	2.80	3420	4.80	12600	7.00	32000	4.90	13300	5.00	14030	2.70	3130	2.20	1830	4.40	10140	3.10	4400	3.10	4400	3.40	5550
7,	2.70	3130	3.00	4050	5.20	15550	9.15	59000	4.70	11930	5.70	19650	2.70	3130	2.30	2070	4.20	9110	3.20	4770	2.20	1830	3.20	4770
8,	2.50	2580	2.50	2580	5.50	17990	10.00	72000	4.60	11300	5.90	21350	2.70	3130	2.50	2580	4.10	8630	3.30	5150	2.40	2320	5.00	14030
9,	2.50	2580	3.00	4050	5.80	20500	11.15	91700	4.40	10140	6.00	22200	2.70	3130	3.10	4400	3.90	7700	3.40	5550	2.40	2320	7.20	34200
10,	2.90	3730	2.50	5970	4.80	12600	9.30	61200	4.00	8160	5.90	21350	2.70	3130	3.00	4050	3.90	7700	3.40	5550	3.40	5550	6.50	26900
11,	3.40	5550	4.00	8160	9.50	64200	8.30	47400	4.20	9110	5.60	18820	2.70	3130	2.90	3730	3.80	7260	3.60	6400	3.60	6400	6.30	24900
12,	3.80	7260	4.00	8160	9.70	67200	7.00	32000	4.30	9610	5.20	15550	2.60	2850	2.80	3420	3.80	7260	3.60	6400	3.40	5550	6.20	24000
13,	4.50	10710	3.80	7260	9.10	58300	6.80	29900	4.30	9610	5.00	14030	2.60	2850	2.80	3420	3.80	7260	3.70	6830	3.30	5150	5.90	21350
14,	4.90	13300	4.20	9110	8.50	50000	6.40	25900	4.40	10140	4.90	13300	2.50	2580	2.70	3130	3.80	7260	3.40	5550	3.20	4770	8.00	43600
15,	4.50	10710	4.00	8160	7.40	36500	6.30	24900	4.50	10710	4.80	12600	2.50	2580	2.70	3130	3.60	6400	3.20	4770	3.20	4770	20.15	326000
16,	4.20	9110	3.80	7260	6.80	29900	5.80	20500	4.50	10710	4.40	10140	2.50	2580	2.60	2850	3.70	6830	3.00	4050	3.10	4400	17.70	247900
17,	4.00	8160	3.50	5970	6.20	24000	5.40	17170	4.70	11930	4.30	9610	2.40	2320	4.10	8630	3.80	7260	2.90	3730	3.10	4400	11.30	94400
18,	4.00	8160	3.20	4770	5.80	20500	5.20	15550	4.60	11300	4.10	8630	2.40	2320	4.30	9610	3.90	7700	2.80	3420	3.00	4050	7.40	36500
19,	3.90	7700	3.00	4050	7.20	34200	5.10	14780	4.80	12600	4.00	8160	2.20	1830	4.50	10710	3.80	7260	2.70	3130	3.00	4050	7.00	32000
20,	3.50	5970	3.00	4050	8.00	43600	6.30	24900	4.40	10140	4.00	8160	2.20	1830	4.70	11930	3.60	6400	2.50	2580	2.90	3730	5.90	21350
21,	3.20	4770	3.20	4770	8.00	43600	11.45	97200	4.20	9110	3.90	7700	2.10	1610	4.60	11300	3.50	5970	2.40	2320	2.80	3420	5.40	17170
22,	3.00	4050	3.00	4050	8.00	43600	14.35	158400	4.20	9110	3.80	7260	2.10	1610	6.40	25900	3.50	5970	2.30	2070	2.60	2850	5.10	14780
23,	3.00	4050	3.90	7700	8.00	43600	11.65	101000	5.20	15550	3.70	6830	2.00	1410	7.90	42400	3.30	5150	2.30	2070	2.40	2320	4.80	12600
24,	2.80	3420	3.00	4050	7.60	38800	10.20	75300	6.20	24000	3.50	5970	2.00	1410	7.70	40000	3.30	5150	2.30	2070	5.00	14030	4.50	10710
25,	2.50	2580	3.00	4050	7.20	34200	9.30	61200	5.80	20500	3.30	5150	2.00	1410	6.80	29900	3.20	4770	2.30	2070	6.70	28900	4.40	10140
26,	2.50	2580	3.00	4050	9.40	62700	8.50	50000	6.00	22200	3.30	5150	2.00	1410	6.20	24000	3.20	4770	2.30	2070	5.90	21350	4.30	9610
27,	2.50	2580	3.00	4050	11.20	92600	7.40	36500	6.40	25900	3.10	4400	2.20	1830	5.70	19650	3.00	4050	2.30	2070	5.50	17990	4.20	9110
28,	2.50	2580	3.00	4050	11.20	92600	5.80	20500	7.10	33100	3.10	4400	2.20	1830	4.80	12600	2.80	3420	2.20	1830	4.80	12600	4.10	8630
29,	2.50	2580	-----	-----	8.70	52700	5.30	16350	11.15	91700	2.90	3730	2.40	2320	4.30	9610	2.70	3130	2.20	1830	4.00	8160	4.10	8630
30,	2.50	2580	-----	-----	7.00	32000	5.00	14030	13.00	128000	2.90	3730	2.50	2580	4.20	9110	2.80	3420	2.20	1830	4.20	9110	4.00	8160
31,	2.50	2580	-----	-----	6.60	27900	-----	-----	10.40	78600	-----	-----	2.50	2580	4.10	8630	-----	-----	2.30	2070	-----	-----	3.90	7700

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BRANCH SUSQUEHANNA RIVER, AT ALLENWOOD, PENNA.

1902. Day.	JAN.		FEB.		MAR.		APR.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.80	7260	5.40	17170	21.60	377200	6.40	25900
2,	3.80	7260	5.20	15550	19.40	300900	6.50	26900
3,	3.60	6400	4.90	13300	15.50	186900	6.50	26900
4,	3.60	6400	4.90	13300	11.50	98100	6.40	25900
5,	3.50	5970	4.90	13300	8.20	46100	5.80	20500
6,	3.50	5970	4.90	13300	6.80	29900	*	------
7,	3.50	5970	4.80	12600	6.40	25900	------	------
8	3.50	5970	4.80	12600	5.50	17990	------	------
9,	3.40	5550	4.80	12600	4.90	13300	------	------
10,	3.40	5550	4.80	12600	6.40	25900	------	------
11,	3.40	5550	4.80	12600	7.60	38800	------	------
12,	3.30	5150	4.70	11930	8.40	48700	------	------
13	3.20	4770	4.70	11930	10.00	72000	------	------
14,	3.20	4770	4.60	11300	8.90	55500	------	------
15,	3.20	4770	4.50	10710	8.60	51400	------	------
16,	3.20	4770	4.70	11930	8.80	54100	------	------
17,	3.20	4770	4.70	11930	12.20	111500	------	------
18,	3.10	4400	4.70	11930	10.00	72000	------	------
19,	3.10	4400	4.70	11930	8.60	51400	------	------
20,	3.10	4400	4.70	11930	7.40	36500	------	------
21,	3.40	5550	4.70	11930	6.70	28900	------	------
22,	7.40	36500	4.70	11930	6.40	25900	------	------
23,	6.80	29900	6.50	26900	5.70	19650	------	------
24,	6.60	27900	7.00	32000	5.40	17170	------	------
25,	6.50	26900	7.40	36500	5.20	15550	------	------
26,	6.30	24900	5.50	17990	4.80	12600	------	------
27,	6.20	24000	5.90	21350	4.70	11930	------	------
28,	5.90	21350	9.70	67200	5.00	14030	------	------
29,	5.90	21350	------	------	5.60	18820	------	------
30,	5.80	20500	------	------	6.10	23100	------	------
31,	5.40	17170	------	------	6.20	24000	------	------

*Discontinued.

ESTIMATED MONTHLY DISCHARGE OF WEST BRANCH SUSQUEHANNA RIVER, AT ALLENWOOD, PENNA.

(Drainage Area 6538 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1899.					
April,	41200	8630	19488	2.981	3.326
May,	36500	4770	8985	1.374	1.584
June,	5970	1830	3383	.517	.577
July,	4050	1040	2205	.337	.388
August,	6830	790	1428	.218	.251
September,	3130	1220	1579	.242	.270
October,	1410	790	980	.150	.173
November,	15550	4050	6690	1.023	1.141
December,	48700	2850	12162	1.860	2.144
1900.					
January,	132300	4770	22007	3.366	3.881
February,	74500	4770	20515	3.138	3.268
March,	65700	6830	21907	3.351	3.863
April,	35300	10140	19705	3.014	3.363
May,	9610	4050	5536	.847	.976
June,	8630	1610	4355	.666	.743
July,	3730	1220	2056	.314	.362
August,	2070	600	1120	.171	.197
September,	1110	510	711	.109	.122
October,	2850	430	1451	.222	.256
November,	193400	900	14291	2.186	2.439
December,	28900	4050	10266	1.570	1.752
The year,	193400	430	10327	1.578	21.222
1901.					
January,	13300	2580	5054	0.773	0.891
February,	9110	2580	4801	.748	.779
March,	92600	3730	35284	5.397	6.222
April,	158400	14030	43702	6.684	7.457
May,	128000	8160	22106	3.381	3.898
June,	50000	3730	14822	2.267	2.529
July,	3730	1410	2524	.386	.445
August,	42400	1830	10313	1.577	1.818
September,	10140	3130	6886	1.053	1.175
October	6830	1830	3785	.579	.668
November,	28900	1830	6715	1.027	1.146
December,	326000	4770	35785	5.473	6.310
The year,	326000	1410	15989	2.445	33.591
1902.					
January,	36500	4400	11809	1.806	2.082
February,	67200	10710	17151	2.623	2.731
March,	377200	11930	61798	9.452	10.897

RAYSTOWN BRANCH JUNIATA RIVER.

DESCRIPTION OF BASIN.

With the Frankstown Branch, which it joins 6 miles below Huntingdon, the Raystown Branch forms the Juniata river. This branch rises on the eastern slope of the Allegheny mountains in the eastern part of Somerset county, and passing into Bedford county, flows easterly to near its eastern border where it turns northward following a most tortuous course into Huntingdon county at Saxton. Through Huntingdon county it follows a windy serpentine course in a general northeast direction to its mouth. The total length of the stream is approximately 110 miles, and its drainage basin comprises 1012 square miles. The largest tributaries are Trough, Yellow, Shavers, Cove and Dunning creeks. In the western part of Bedford county the stream drains a limestone region, while its larger tributaries drain well timbered, sparsely developed areas. The tributaries coming in from the east between Hopewell and Saxton drain the Broad Top Mountain soft coal district, while Great Trough creek drains the coal district at Robertsdale and Woodvale.

In Bedford county the stream and its tributaries are considerably used for domestic and industrial water supply. At Hawns Bridge, Huntingdon county, some 10 or 12 miles above the mouth, a 28 foot dam has been built, and a 3,600 H. P. water power plant erected. For over 40 miles above its mouth there is no railroad in the valley, which is quite an exception for so large a stream.

The mean annual precipitation over this water shed is from 40 to 45 inches.

The discharge has been measured since August 31, 1911, at Saxton, Bedford county.

SUSQUEHANNA BASIN—STATION NO. 17.

RAYSTOWN BRANCH JUNIATA RIVER AT SAXTON.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania on August 31st, 1911, on a two span, steel, through-truss, highway bridge, between Stonestown and Saxton Furnace, to replace the station at Hawns' Bridge, which was discontinued owing to the construction of a dam immediately above the gage.

The channel is approximately straight for 300 feet above the station, and is straight for 300 feet below. The right and left banks are high and overflow only during extreme high stages. The bed is of sand, gravel and stones, and is fairly permanent.

Discharge measurements are taken from the downstream side of the bridge, the initial point for soundings being the bridge pin, right downstream side.

A chain gage, with removable weight and chain, is attached to the floor on the downstream side of the bridge. The length of chain from bottom of weight to center of marker is 23.00 feet. The elevation of zero is arbitrary datum. Bench mark No. 1 is chiseled mark on stone on right downstream wingwall, on top of stone 12th course down from top, and 5th course from bottom, elevation 9.65 feet above zero of gage. The gage is read twice daily by W. C. Jenkins.

The flow under the bridge at low water is very sluggish with no flow or water in the left channel.

Since the establishment of this station, 6 discharge measurements have been made, but owing to the insufficient number of measurements, no rating table has been computed for this station, and only the discharge measurements and gage heights have been published.

DISCHARGE MEASUREMENTS OF RAYSTOWN BRANCH JUNIATA RIVER, AT SAXTON, BEDFORD COUNTY, PENNA.

(Drainage area, 790 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1911.							
1.	Aug. 30,	Langenheim, ----------	290	1557	3.70	6.17	5760	Surface msmt.
2.	Aug. 31,	do	290	1268	3.61	5.17	4581	Surface msmt.
3.	Nov. 17,	do	166	326	1.39	1.98	454	
4.	Dec. 8,	Boehringer, ----------	144	286	1.08	1.63	309	
	1912.							
5.	Mar. 20,	Boehringer, ----------	298	1412	3.35	5.22	4736	Surface msmt.
6.	Apr. 25,	Reckord & Boehringer, ----------	262	602	1.74	2.66	1050	0.6 msmt.

DAILY MEAN GAGE HEIGHTS OF RAYSTOWN BRANCH JUNIATA RIVER, AT SAXTON, BEDFORD COUNTY, PENNA.

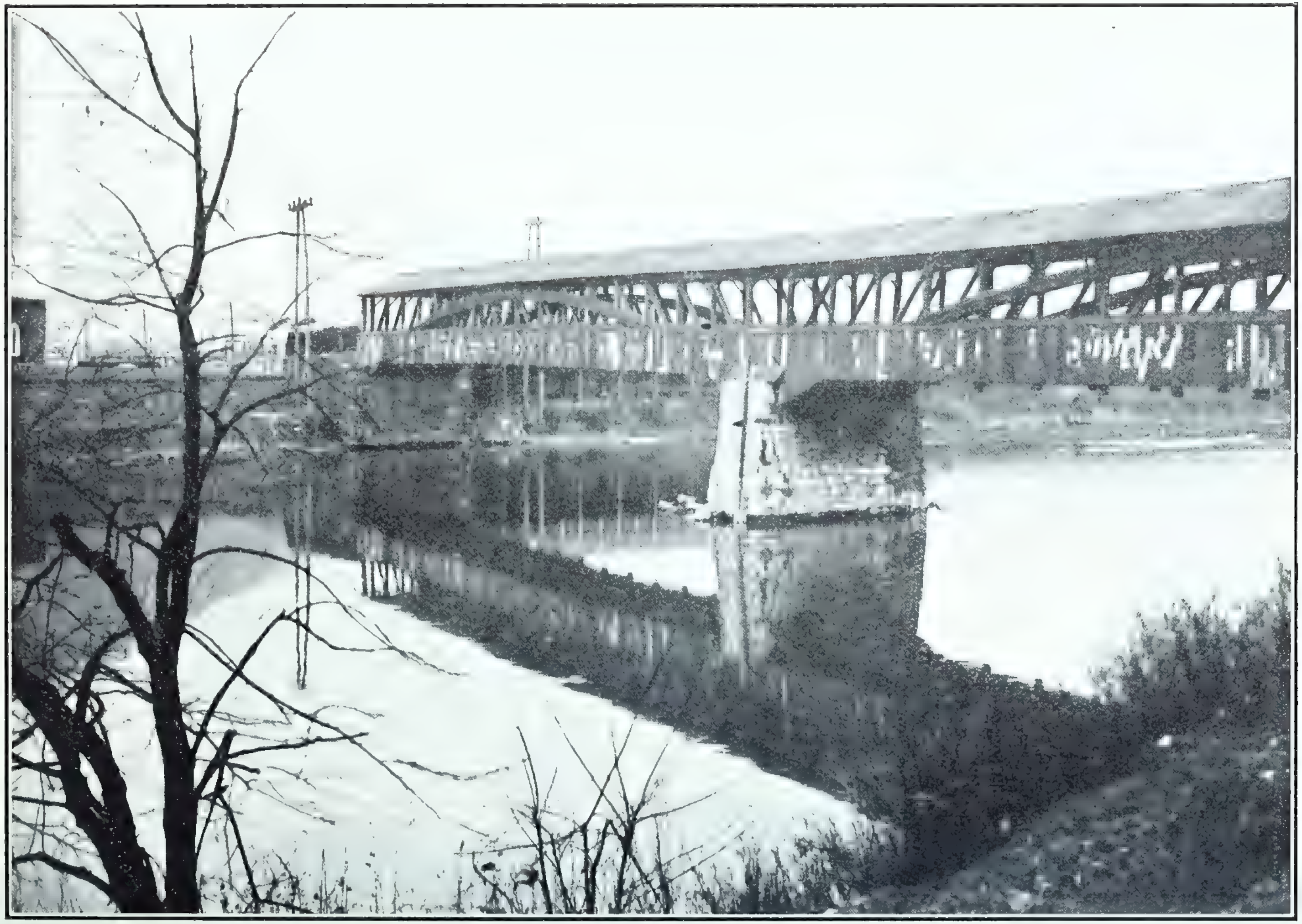
1911. Day.	AUGUST.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.
	G H	G H	G H	G H	G H
1,	------	5.94	2.40	1.96	1.71
2,	------	3.82	2.88	1.88	1.64
3,	------	2.90	3.08	1.72	1.66
4	------	2.40	2.86	1.70	1.64
5,	------	2.06	2.78	1.64	1.57
6,	------	2.03	2.32	1.72	1.53
7,	------	2.52	2.28	2.38	1.47
8,	------	1.95	2.68	2.65	1.53
9,	------	2.87	2.22	2.50	1.55
10,	------	4.64	2.16	2.50	1.47
11,	------	3.42	2.14	2.18	1.48
12,	------	2.98	2.25	2.09	1.49
13,	------	2.40	2.06	2.02	1.48
14,	------	2.06	1.86	2.10	1.45
15,	------	3.72	1.85	1.92	1.83
16,	------	7.08	1.84	1.94	3.59
17,	------	5.20	1.88	1.83	5.11
18,	------	3.88	2.85	2.01	4.13
19,	------	3.27	3.68	2.51	3.38
20,	------	2.92	3.12	2.35	3.01
21	------	2.54	2.84	2.34	2.68
22,	------	2.41	2.12	2.29	2.69
23,	------	2.48	3.05	2.16	3.25
24,	------	2.07	2.79	2.04	3.58
25,	------	1.92	2.62	2.04	3.39
26,	------	1.80	2.45	1.98	3.29
27,	------	1.68	2.34	1.90	4.73
28.	------	1.80	2.30	1.86	4.68
29,	------	2.44	2.18	1.84	3.63
30,	------	3.62	2.07	1.87	3.55
31,	5.92	------	2.01	------	3.37

FRANKSTOWN BRANCH JUNIATA RIVER.

DESCRIPTION OF BASIN.

The Frankstown Branch of the Juniata river drains approximately 995 square miles in Bedford, Blair and Huntingdon counties. Rising in the northern part of Bedford county, this stream flows first in a general northerly direction to Hollidaysburg; thence northeasterly through Blair county to Petersburg, Huntingdon county, where it flows southeasterly to its junction, a total length of approximately 58 miles, the general outline of the basin being fanshaped. The headwaters lie high up on the Allegheny mountains, but as the stream descends it enters a fertile, well settled, agricultural valley, through which it flows to Petersburg, and thence through a deep gorge, cutting through a succession of ridges to its confluence, six miles below Huntingdon, with the Raystown Branch. The mountains in this basin are well covered with second growth timber, but the valleys are almost deforested. The upper section of the basin contains limestone formation, from which issue numerous large springs, which materially assist the flow in dry weather. As a whole the watershed is thickly settled especially along the banks of the river, and its principal tributaries, of which Little Juniata is the most important, there being one city, Altoona, and many large industrial boroughs and villages scattered over the area. The river and its tributaries are extensively used for water supply, both domestic and industrial. The sources of the Frankstown Branch lie at an elevation of approximately 1,300 feet, and in a distance of 26 miles to Hollidaysburg (elevation 930) the fall is at the rate of 20 feet per mile; from this point to Huntingdon (elevation 610), 28 mlies further down stream, the rate of fall is 12 feet per mile. The bed is rocky throughout most of its course, with gravel and sand deposits at intervals in the less rapid portions.

A concrete dam 28 feet in heighth, erected and used for the generation of water-power, crosses the river at Warrior Ridge, 5 miles above Huntingdon, creating slack-water for about 3 miles.



Gage on Frankstown Branch, Juniata River at Huntingdon.

The mean annual precipitation over practically the entire watershed is from 40 to 45 inches.

The discharge has been measured since May 1, 1895, at Huntingdon, 6 miles above the confluence with the Raystown Branch.

SUSQUEHANNA BASIN—STATION NO. 18.

FRANKSTOWN BRANCH JUNIATA RIVER AT HUNTINGDON.

DESCRIPTION OF STATION.

This station was established by the United States Weather Bureau on May 1st, 1895, on the county highway bridge at the foot of 4th. Street, Huntingdon. On November 1st, 1890, the Weather Bureau began readings on a gage painted on the 4th Street bridge pier, graduated to feet and half-feet. On August 31st, 1893, readings on this gage were discontinued, and were commenced on May 1, 1895, supposedly on the same gage, but the zero of this latter gage seems to be about 3.0 feet lower than the former. This gage was used until 1899 or 1900, when the present staff gage was installed at the same datum. On July 24, 1907, the Water Supply Commission of Pennsylvania began making discharge measurements, in order to rate this station.

The channel is straight for 500 feet above and below the station. The right bank is low and overflows during high stages, while the left bank is high and does not overflow.

In order that the discharge of the entire stream may be obtained, during freshets, when the water passes around the 4th. Street bridge, discharge measurements are taken from a steel, highway bridge, about ¼ mile above the gage. Low water measurements are taken at the 4th Street bridge by wading. The initial point for soundings is left end of top angle of handrail, downstream side.

A 2′x10′ oak staff gage, painted white, with black graduations to feet and tenths, is fastened to the first pier from the north end of the 4th. Street bridge. The elevation of zero is 597.4 feet. Bench mark No. 1 is a copper bolt in head of race arch, south end, 27.6 feet above zero of gage, and 625 feet above sea level. It is 23.6 feet below the top of rail in front of Pennsylvania Railroad Depot. The gage is read once and twice daily by Lawrence White.

Since the Juniata Hydro-Electric Company, 5 miles above, at Warrior's Ridge, began operating its plant in the spring of 1908, low water readings are affected by storage at this plant.

Since the establishment of this station, 24 discharge measurements have been made.

The daily gage heights at this station have been furnished by the United States Weather Bureau.

DISCHARGE MEASUREMENTS OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, PENNA.

(Drainage area, 845 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1907.							
1.	July 24,	Gannett,	249	601	0.71	3.25	425	
2.	Oct. 12,	Grant,	226	567	0.64	3.22	360	
	1908.							
3.	Feb. 18,	Grant,	275	1246	1.76	4.99	2197	
4.	Mar. 9,	Grant,	275	2088	3.79	7.65	7899	
5.	Mar. 10,	Grant,	275	1862	3.51	6.85	6530	
6.	Mar. 10,	Grant,	272	1757	3.34	6.48	5866	
7.	Mar. 19,	Ryder,	275	3583	7.78	12.70	27854	
8.	Mar. 20,	Ryder,	275	2584	5.03	9.50	12985	
9.	Mar. 20,	Ryder,	275	2359	4.40	8.70	10378	
10.	Sept. 8,	Langenheim,	194	466	0.31	2.65	145	Warrior Ridge plant running.
	1910.							
11.	Feb. 22,	Bridges,	------	1464	2.41	5.6	3527	
12.	Feb. 28,	do	------	2242	3.73	7.8	8383	
13.	Mar. 1,	do	------	2540	4.29	8.8	10904	
14.	Mar. 1,	do	------	2540	4.38	8.84	11122	
15.	Mar. 2,	do	------	2522	4.35	8.65	10982	
16.	Mar. 2,	do	------	2467	4.13	8.45	10196	
17.	Mar. 2,	dd	------	2522	4.47	8.75	11258	
18.	Mar. 3,	do	------	2522	4.36	8.60	10982	
19.	Mar. 3,	do	------	2311	3.94	7.95	9102	
20.	Mar. 3,	do	------	2291	3.83	7.85	8773	
21.	Mar. 4,	do	------	2152	3.64	7.55	7577	
22.	Mar. 4,	do	------	2015	3.44	7.10	6613	
23.	Mar. 4,	do	------	2042	3.54	7.20	6929	
	1912.							
24.	April 26,	Boehringer & Reckord,	267	1070	1.44	4.50	1539	0.6 msmt.

DISCHARGE TABLE FOR FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, FROM MAY 1, 1895, TO DECEMBER 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
2.40	75	.80	2080	.20	6960	.50	13100	.80	22470
.50	100	.90	2240	.30	7200	.60	13420	.90	22990
.60	130	5.00	2400	.40	7440	.70	13740	12.00	23530
.70	160	.10	2560	.50	7680	.80	14070	.10	24100
.80	200	.20	2720	.60	7920	.90	14410	.20	24690
.90	240	.30	2890	.70	8160	10.00	14750	.30	25300
3.00	285	.40	3080	.80	8400	.10	15100	.40	25930
.10	330	.50	3270	.90	8650	.20	15450	.50	26590
.20	380	.60	3460	8.00	8900	.30	15810	.60	27250
.30	430	.70	3650	.10	9150	.40	16180	.70	27920
.40	480	.80	3850	.20	9400	.50	16560	.80	28600
.50	540	.90	4050	.30	9660	.60	16950	.90	29290
.60	610	6.00	4250	.40	9920	.70	17350	13.00	50000
.70	700	.10	4460	.50	10200	.80	17760	.10	30720
.80	800	.20	4680	.60	10480	.90	18180	.20	31460
.90	900	.30	4900	.70	10760	11.00	18620	.30	32220
4.00	1000	.40	5120	.80	11040	.10	19070	.40	33000
.10	1110	.50	5350	.90	11320	.20	19530	.50	33800
.20	1220	.60	5580	9.00	11600	.30	20000	.60	34600
.30	1350	.70	5810	.10	11890	.40	20480	.70	35400
.40	1490	.80	6040	.20	12180	.50	20970	.80	36200
.50	1630	.90	6270	.30	12480	.60	21460	.90	37000
.60	1780	7.00	6500	.40	12790	.70	21960	14.00	37800
.70	1930	.10	6730						

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, PENNA.

1895.	MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.0	1000	3.2	380	3.3	430	3.0	285	2.9	240	2.7	160	2.9	240	2.9	240
2,	3.2	380	3.2	380	3.3	430	3.0	285	2.9	240	2.7	160	2.9	240	2.9	240
3,	3.6	610	3.2	380	3.3	430	3.0	285	2.9	240	2.7	160	2.9	240	2.9	240
4,	3.5	540	3.2	380	3.2	380	3.0	285	2.9	240	2.7	160	2.9	240	2.9	240
5,	3.4	480	3.2	380	3.1	330	3.0	285	2.9	240	2.7	160	2.9	240	2.9	240
6,	3.2	380	3.4	480	3.1	330	3.0	285	2.9	240	2.7	160	2.9	240	2.9	240
7,	3.2	380	3.2	380	3.2	380	3.0	285	2.9	240	2.7	160	2.9	240	2.9	240
8,	3.2	380	3.2	380	3.1	330	3.0	285	2.9	240	2.7	160	2.9	240	2.9	240
9,	3.8	800	3.2	380	3.0	285	3.1	330	2.9	240	2.8	200	2.9	240	2.8	200
10,	3.8	800	3.1	330	3.0	285	3.1	330	2.9	240	2.8	200	2.9	240	2.8	200
11,	3.6	610	3.0	285	3.0	285	3.1	330	2.9	240	2.8	200	2.9	240	2.8	200
12,	4.0	1000	3.0	285	3.0	285	3.1	330	2.9	240	2.8	200	2.9	240	2.8	200
13,	4.0	1000	3.0	285	3.0	285	3.1	330	2.9	240	2.8	200	2.9	240	2.8	200
14,	3.9	900	3.4	480	3.0	285	3.1	330	2.9	240	2.8	200	2.9	240	2.3	200
15,	3.7	700	3.2	380	3.0	285	3.1	330	2.9	240	2.8	200	2.9	240	2.8	200
16,	3.6	610	3.2	380	3.0	285	3.1	330	2.9	240	2.8	200	2.9	240	2.6	130
17,	3.6	610	3.2	380	3.0	285	3.1	330	2.9	240	2.8	200	2.9	240	2.6	130
18,	3.5	540	3.2	380	3.0	285	3.1	330	2.9	240	2.8	200	2.9	240	2.6	130
19,	3.5	540	3.2	380	3.0	285	3.1	330	2.9	240	2.8	200	2.9	240	2.6	130
20,	3.5	540	3.2	380	3.0	285	3.1	330	3.1	330	2.8	200	2.9	240	2.6	130
21,	3.5	540	3.0	285	3.0	285	3.1	330	3.0	285	2.8	200	2.9	240	2.6	130
22,	3.6	610	3.0	285	3.0	285	3.1	330	2.9	240	2.8	200	2.9	240	3.8	800
23,	3.5	540	3.0	285	3.0	285	3.1	330	2.9	240	2.8	200	2.9	240	3.4	480
24,	3.5	540	3.0	285	3.0	285	3.1	330	2.9	240	2.8	200	2.9	240	3.0	285
25,	3.4	480	3.0	285	3.0	285	3.1	330	2.9	240	2.8	200	2.9	240	3.0	285
26,	3.5	540	3.0	285	3.0	285	3.1	330	2.9	240	2.8	200	2.9	240	2.9	240
27,	3.6	610	4.0	1000	3.0	285	3.0	285	2.9	240	2.8	200	2.9	240	3.9	900
28,	3.7	700	5.2	2720	3.1	330	3.1	330	2.9	240	2.8	200	3.0	285	3.9	900
29,	3.6	610	3.6	610	3.0	285	3.1	330	2.9	240	2.8	200	3.0	285	3.8	800
30,	3.5	540	3.6	610	3.0	285	3.1	330	2.7	160	2.8	200	3.0	285	3.8	800
31,	3.4	480	-----	-----	3.0	285	3.1	330	-----	-----	2.8	200	-----	-----	3.9	900

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, PENNA.

1896.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.9	900	3.1	330	4.0	1000	6.3	4900	3.8	800	3.2	380	4.0	1000	4.2	1220	2.9	240	5.5	3270	3.6	610	3.8	800
2,	3.9	900	4.1	1110	4.0	1000	6.0	4250	3.8	800	3.2	380	3.9	900	4.2	1220	2.9	240	4.5	1630	3.6	610	3.7	700
3,	3.9	900	4.0	1000	3.0	285	5.3	2890	3.8	800	3.2	380	3.9	900	4.0	1000	2.9	240	3.3	430	3.6	610	3.7	700
4,	3.2	380	4.0	1000	3.0	285	5.0	2400	3.8	800	3.2	380	3.8	800	3.8	800	2.9	240	3.3	430	3.9	900	3.7	700
5,	3.2	380	3.9	900	3.0	285	4.7	1930	3.8	800	3.8	800	3.8	800	3.7	700	2.9	240	3.3	430	4.9	2240	3.7	700
6,	3.1	330	3.9	900	3.0	285	4.3	1350	3.8	800	3.5	540	3.8	800	3.7	700	2.9	240	3.3	430	5.9	4050	2.6	610
7,	3.0	285	6.0	4250	3.0	285	4.3	1350	3.8	800	3.4	480	3.7	700	3.6	610	2.9	240	3.3	430	4.9	2240	3.5	540
8,	3.0	285	4.6	1780	3.0	285	4.1	1110	3.6	610	4.8	2080	3.7	700	3.8	800	2.9	240	3.3	430	4.5	1630	3.5	540
9,	3.0	285	4.4	1490	3.0	285	4.1	1110	3.6	610	4.0	1000	3.8	800	3.7	700	2.9	240	3.3	430	4.3	1350	4.4	1490
10,	3.0	285	4.0	1000	3.1	330	4.0	1000	3.6	610	4.0	1000	3.9	900	3.5	540	2.9	240	3.3	430	4.0	1000	4.8	2080
11,	3.0	285	3.8	800	3.3	430	4.0	1000	3.6	610	3.8	800	3.9	900	3.4	480	2.9	240	3.3	430	4.0	1000	4.0	1000
12,	3.0	285	3.6	610	3.3	430	4.6	1780	3.6	610	3.6	610	3.8	800	3.3	430	2.9	240	4.3	430	4.4	1490	4.0	1000
13,	3.0	285	3.6	610	3.3	430	4.9	2240	3.6	610	3.4	480	3.6	610	3.4	480	3.0	285	3.7	700	4.0	1000	4.0	1000
14,	2.8	200	3.9	900	3.3	430	4.9	2240	3.6	610	4.0	1000	3.6	610	3.5	540	3.0	285	3.9	900	4.0	1000	4.0	1000
15,	2.8	200	3.9	900	3.4	480	4.7	1930	3.6	610	4.4	1490	3.3	430	3.4	480	3.0	285	4.2	1220	3.9	900	3.9	900
16,	3.8	200	4.6	1780	3.4	480	4.4	1490	3.6	610	4.0	1000	4.4	1490	3.3	430	3.1	330	3.9	900	3.9	900	3.9	900
17,	2.8	200	4.6	1780	3.4	480	4.2	1220	3.6	610	6.3	4900	4.0	1000	3.2	380	3.0	285	3.8	800	3.9	900	3.8	800
18,	2.8	200	4.0	1000	3.4	480	4.1	1110	3.5	540	5.4	3080	3.8	800	3.1	330	2.9	240	3.5	540	3.8	800	3.8	800
19,	2.8	200	4.0	1000	3.4	480	4.1	1110	3.4	480	5.0	2400	3.8	800	3.1	330	2.9	240	3.5	540	3.8	800	3.8	800
20,	2.8	200	3.9	900	3.8	800	4.0	1000	3.4	480	4.9	2240	3.7	700	3.1	330	3.1	330	3.4	480	3.7	700	3.8	800
21,	2.8	200	3.9	900	3.8	800	4.0	1000	3.4	480	5.0	2400	3.7	700	3.0	285	3.0	285	3.7	700	3.5	540	3.6	610
22,	2.8	200	3.8	800	4.0	1000	4.0	1000	3.4	480	4.4	1490	3.7	700	3.0	285	2.9	240	3.7	700	3.9	900	3.4	480
23,	2.8	200	3.8	800	4.6	1780	4.0	1000	3.4	480	4.0	1000	3.7	700	3.0	285	2.9	240	3.7	700	3.9	900	3.4	480
34,	3.0	285	4.0	1000	4.6	1780	4.0	1000	3.4	480	4.0	1000	3.7	700	3.0	285	2.9	240	3.9	900	3.8	800	3.4	480
25,	4.6	1780	4.0	1000	4.0	1000	4.0	1000	3.4	480	6.9	6270	5.0	2400	3.0	285	2.9	240	3.9	900	3.7	700	3.4	480
26,	4.0	1000	3.9	900	4.5	1630	4.0	1000	3.4	480	5.9	4050	4.0	1000	3.0	285	2.9	240	3.9	900	3.6	610	3.4	480
27,	3.6	610	3.9	900	4.9	2240	4.0	1000	3.4	480	5.0	2400	3.8	800	3.0	285	2.9	240	3.8	800	3.7	700	3.4	480
28,	3.3	430	3.9	900	5.0	2400	4.0	1000	3.4	480	4.5	1630	4.7	1930	3.0	285	2.9	240	3.8	800	3.7	700	3.4	480
29,	3.3	430	4.0	1000	6.3	4900	3.9	900	3.4	480	4.3	1350	4.0	1000	3.0	285	2.9	240	3.7	700	4.0	1000	3.4	480
30,	3.1	330	-----	-----	7.7	8160	3.8	800	3.3	430	4.0	1000	4.9	2240	3.0	285	11.5	20970	3.6	610	3.9	900	3.4	480
31,	3.0	285	-----	-----	7.3	7200	-----	-----	3.2	380	-----	-----	4.9	2240	3.0	285	-----	-----	3.6	610	-----	-----	3.4	480

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, PENNA.

1897.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.6	610	3.4	480	4.3	1350	4.0	1000	3.8	800	3.5	540	3.0	285	3.3	430	2.8	200	2.8	200	2.8	200	3.8	800
2,	3.6	610	3.3	430	4.0	1000	3.9	900	5.7	3650	3.4	480	3.0	285	3.2	380	2.8	200	2.8	200	4.0	1000	3.5	540
3,	3.6	610	3.3	430	4.4	1490	3.9	900	7.2	6900	3.3	430	3.0	285	3.1	330	2.8	200	2.8	200	4.2	1220	3.5	540
4,	3.5	540	3.3	430	5.4	3080	3.9	900	6.0	4250	3.3	430	3.0	285	3.1	330	2.8	200	2.8	200	3.2	380	3.5	540
5,	4.9	2240	3.3	430	5.2	2720	3.9	900	5.7	3650	3.4	480	3.0	285	3.4	480	2.8	200	2.8	200	3.0	285	4.7	1930
6,	4.3	1350	3.2	380	6.9	6270	4.0	1000	5.2	2720	3.4	480	3.0	285	3.2	380	2.8	200	2.8	200	3.0	285	4.5	1630
7,	3.9	900	5.4	3080	6.3	4900	4.0	1000	5.0	2400	3.3	430	3.0	285	3.1	330	2.8	200	2.8	200	3.0	285	4.2	1220
8,	3.9	900	5.0	2400	5.7	3650	4.0	1000	4.7	1930	3.3	430	3.0	285	3.0	285	2.8	200	2.8	200	3.0	285	3.9	900
9,	3.9	900	4.5	1630	5.2	2720	6.3	4900	4.3	1350	3.3	430	3.0	285	3.0	285	2.8	200	2.8	200	3.5	540	3.7	700
10,	3.9	900	4.0	1000	5.2	2720	6.7	5810	4.3	1350	3.2	380	2.8	200	3.0	285	2.8	200	2.8	200	4.2	1220	3.7	700
11,	3.7	700	3.9	900	5.4	3080	5.5	3270	4.1	1110	3.0	285	2.8	200	4.0	1000	2.8	200	2.8	200	3.7	700	3.7	700
12,	3.6	610	3.9	900	5.3	2890	5.3	2890	4.0	1000	3.0	285	2.8	200	3.2	380	2.8	200	2.8	200	3.7	700	3.7	700
13,	3.6	610	3.7	700	5.3	2890	5.0	2400	4.0	1000	3.0	285	2.8	200	3.0	285	2.8	200	2.8	200	3.5	540	3.9	900
14,	3.6	610	3.7	700	5.3	2890	4.7	1930	5.0	2400	3.0	285	2.8	200	3.0	285	2.8	200	2.8	200	3.0	285	3.7	700
15,	3.6	610	3.7	700	5.1	2560	5.0	2400	4.8	2080	3.0	285	2.8	200	3.0	285	2.8	200	2.8	200	3.2	380	6.0	4250
16,	3.6	610	3.8	800	4.8	2080	5.0	2400	4.4	1490	3.0	285	2.8	200	3.0	285	2.8	200	2.8	200	4.0	1000	5.0	2400
17,	3.5	540	3.8	800	4.5	1630	5.2	2720	4.3	1350	3.0	285	2.8	200	3.0	285	2.8	200	2.8	200	4.0	1000	4.5	1630
18,	3.5	540	4.8	2080	4.3	1350	5.0	2400	4.1	1110	3.0	285	2.8	200	3.0	285	2.8	200	2.8	200	4.0	1000	4.5	1630
19,	3.5	540	5.2	2720	5.3	2890	4.7	1930	4.0	1000	3.0	285	4.0	1000	3.0	285	2.8	200	2.8	200	3.8	800	4.3	1350
20,	3.5	540	4.8	2080	6.3	4900	4.3	1350	4.0	1000	3.0	285	3.7	700	3.0	285	2.8	200	2.8	200	3.5	540	4.0	1000
21,	3.5	540	4.4	1490	5.9	4050	4.2	1220	4.0	1000	3.5	540	3.5	540	3.0	285	2.8	200	2.8	200	3.2	380	4.0	1000
22,	3.4	480	5.2	2720	5.3	2890	4.1	1110	3.9	900	3.0	285	3.4	480	3.0	285	2.8	200	2.8	200	3.0	285	4.0	1000
23,	3.4	480	8.7	10760	6.3	4900	4.0	1000	3.9	900	3.0	285	3.4	480	3.0	285	2.8	200	2.8	200	3.0	285	4.0	1000
24,	3.4	480	7.7	8160	6.4	5120	4.0	1000	3.9	900	3.0	285	3.2	380	3.0	285	3.8	800	2.8	200	3.0	285	3.9	900
25,	3.4	480	5.4	3080	6.0	4250	4.0	1000	3.8	800	3.2	380	3.1	330	3.0	285	3.5	540	2.8	200	3.0	285	3.9	900
26,	3.4	480	5.0	2400	5.5	3270	3.9	900	3.8	800	3.0	285	3.0	285	3.0	285	3.0	285	3.0	285	3.0	285	3.9	900
27,	3.4	480	4.5	1630	5.2	2720	3.9	900	3.8	800	3.0	285	3.0	285	3.0	285	3.0	285	2.9	240	4.0	1000	3.9	900
28,	3.4	480	4.3	1350	4.9	2240	3.9	900	3.7	700	3.0	285	4.0	1000	3.0	285	3.0	285	2.8	200	4.0	1000	3.9	900
29,	3.4	480	------	------	4.5	1630	3.9	900	3.6	610	3.0	285	4.0	1000	2.8	200	3.0	285	2.8	200	4.0	1000	3.9	900
30,	3.4	480	------	------	4.5	1630	3.8	800	3.5	540	3.0	285	3.5	540	2.8	200	2.8	200	2.8	200	4.0	1000	3.9	900
31,	4.4	1490	------	------	4.4	1490	------	------	3.5	540	------	------	3.4	480	2.8	200	------	------	2.8	200	------	------	3.9	900

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, PENNA.

1898.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.9	900	4.2	1220	4.0	1000	5.5	3270	4.0	1000	4.1	1110	2.9	240	3.7	700	3.0	285	2.8	200	3.9	900	3.6	610
2,	3.8	800	4.2	1220	4.0	1000	5.0	2400	3.9	900	4.0	1000	2.9	240	3.0	285	3.0	285	2.8	200	3.9	900	3.5	540
3,	3.7	700	4.1	1110	4.0	1000	4.8	2080	4.0	1000	4.0	1000	2.9	240	3.0	285	3.0	285	2.8	200	3.8	800	3.4	480
4,	3.7	700	4.0	1000	4.0	1000	4.7	1930	4.0	1000	3.9	900	2.9	240	3.4	480	2.9	240	2.8	200	3.8	800	3.2	380
5,	3.7	700	*4.0	1000	4.0	1000	4.7	1930	3.9	900	3.9	900	2.9	240	6.5	5350	2.9	240	2.8	200	3.7	700	5.0	2400
6,	3.6	610	*4.0	1000	4.0	1000	4.4	1490	4.0	1000	3.8	800	2.9	240	4.0	1000	2.9	240	2.8	200	3.6	610	4.5	1630
7,	3.6	610	*4.0	1000	3.9	900	4.4	1490	4.5	1630	3.7	700	2.8	200	3.4	480	2.9	240	2.8	200	3.5	540	4.0	1000
8,	4.0	1000	*4.0	1000	3.9	900	4.3	1350	5.0	2400	3.7	700	2.8	200	3.0	285	2.9	240	2.8	200	3.5	540	3.8	800
9,	4.7	1930	*4.0	1000	3.9	900	4.1	1110	4.5	1630	3.6	610	2.8	200	4.4	1490	2.9	240	2.8	200	3.5	540	3.7	700
10,	4.7	1930	*4.4	1500	3.9	900	4.1	1110	4.2	1220	3.4	480	2.8	200	4.0	1000	2.9	240	2.8	200	3.5	540	3.7	700
11,	4.0	1000	*4.75	2000	4.0	1000	4.0	1000	4.2	1220	3.3	430	2.8	200	4.0	1000	2.9	240	2.8	200	5.5	3270	3.6	610
12,	4.0	1000	5.2	2720	4.2	1220	3.9	900	4.0	1000	3.1	330	2.8	200	4.0	1000	2.9	240	2.8	200	4.0	1000	3.6	610
13,	5.0	2400	5.2	2720	4.7	1930	3.9	900	4.0	1000	3.1	330	2.8	200	3.8	800	2.9	240	2.8	200	4.0	1000	3.6	610
14,	5.0	2400	5.2	2720	5.0	2400	3.9	900	4.0	1000	3.8	800	2.8	200	3.4	480	2.9	240	2.8	200	4.0	1000	3.6	610
15,	5.0	2400	5.0	2400	4.5	1630	3.9	900	4.0	1000	3.5	540	2.8	200	3.2	380	2.8	200	2.8	200	4.0	1000	3.4	480
16,	5.9	4050	5.0	2400	4.7	1930	3.9	900	5.4	3080	3.1	330	2.8	200	3.0	285	2.8	200	2.8	200	4.0	1000	3.4	480
17,	5.0	2400	*5.0	2400	4.7	1930	3.9	900	5.6	3460	3.0	285	2.8	200	3.0	285	2.8	200	2.7	160	4.0	1000	3.4	480
18,	4.8	2080	*5.0	2400	4.5	1630	3.9	900	5.3	2890	3.0	285	2.8	200	3.0	285	2.8	200	2.7	160	4.0	1000	3.4	480
19,	4.8	2080	*5.0	2400	4.3	1350	3.9	900	5.0	2400	3.0	285	2.8	200	3.8	800	2.8	200	5.9	4050	4.0	1000	3.4	480
20,	4.8	2080	*5.0	2400	4.3	1350	3.9	900	5.0	2400	3.6	610	2.8	200	4.0	1000	2.8	200	5.3	2890	4.0	1000	3.5	540
21,	5.5	3270	5.0	2400	4.6	1780	3.9	900	5.2	2720	3.2	380	2.8	200	3.7	700	2.8	200	5.0	2400	4.0	1000	4.5	1630
22,	5.0	2400	5.0	2400	6.0	4250	3.9	900	5.0	2400	3.0	285	2.8	200	3.5	540	2.8	200	9.7	13740	4.0	1000	4.9	2240
23,	7.0	6500	4.6	1780	10.2	15450	3.9	900	5.0	2400	3.0	285	2.8	200	3,2	380	2.8	200	6.0	4250	3.8	800	5.9	4050
24,	6.0	4250	4.4	1490	7.3	7200	4.2	1220	8.0	8900	3.0	285	2.8	200	3.0	285	2.8	200	5.0	2400	3.8	800	5.0	2400
25,	5.3	2890	4.2	1220	6.5	5350	4.8	2080	5.8	3850	3.0	285	2.8	200	3.0	285	2.8	200	5.0	2400	3.8	800	4.8	2080
26,	5.0	2400	4.0	1000	5.5	3270	4.5	1630	5.5	3270	3.0	285	2.8	200	3.0	285	2.8	200	4.1	1110	3.8	800	4.6	1780
27,	5.0	2400	4.0	1000	5.2	2720	4.2	1220	5.0	2400	3.0	285	3.0	285	3.0	285	3.3	430	4.1	1110	3.8	800	4.3	1350
28,	4.7	1930	4.0	1000	4.9	2240	4.1	1110	4.7	1930	3.0	285	3.0	285	3.0	285	3.0	285	4.1	1110	3.8	800	4.3	1350
29,	4.7	1930	------	------	7.9	8650	4.0	1000	4.5	1630	3.0	285	3.3	430	3.0	285	2.9	240	4.1	1110	3.6	610	4.3	1350
30,	4.3	1350	------	------	7.3	7200	4.0	1000	4.4	1490	2.9	240	3.1	330	3.0	285	2.8	200	4.1	1110	3.8	800	4.3	1350
31,	4.2	1220	------	------	6.2	4680	------	------	4.2	1220	------	------	3.0	285	3.0	285	------	------	4.1	1110	------	------	4.3	1350

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, PA.

1899	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.0	1000			5.5	3270							3.0	285	3.0	285	3.0	285	3.0	285	3.8	800	3.0	285
2,	4.0	1000			5.5	3270							3.0	285	3.0	285	3.0	285	3.0	285	4.8	2080	3.0	285
3,	4.0	1000			5.5	3270					3.5	540	3.0	285	3.0	285	3.0	285	3.0	285	3.8	800	3.0	285
4,	4.0	1000			5.5	3270					3.5	540	3.0	285	3.0	285	3.0	285	3.0	285	3.2	380	3.0	285
5,	4.6	1780			7.5	7680					3.5	540	3.0	285	3.0	285	3.0	285	3.0	285	3.0	285	3.0	285
6,	4.9	2240			6.5	5350					3.5	540	3.4	480	3.0	285	3.0	285	3.0	285	3.0	285	3.0	285
7,	4.6	1780			6.5	5350					3.2	380	3.9	900	3.0	285	3.0	285	3.0	285	3.0	285	3.0	285
8,					6.4	5120					3.2	380	3.4	480	3.0	285	3.0	285	3.0	285	3.0	285	3.0	285
9,					5.0	2400					3.2	380	3.8	800	3.0	285	3.0	285	3.0	285	3.0	285	3.0	285
10,											3.0	285	3.2	380	3.0	285	3.0	285	2.8	200	3.0	285	3.0	285
11,											3.0	285	3.0	285	3.0	285	3.0	285	2.8	200	3.0	285	3.0	285
12,											3.0	285	3.0	285	3.0	285	5.0	2400	2.8	200	3.0	285	3.0	285
13,											3.0	285	3.0	285	3.0	285	4.0	1000	2.8	200	3.0	285	4.8	2080
14,											3.0	285	3.0	285	3.0	285	3.0	285	2.8	200	3.0	285	4.2	1220
15,	5.0	2400									3.0	285	3.0	285	3.0	285	3.0	285	2.8	200	3.0	285	4.0	1000
16,	5.0	2400									3.0	285	3.3	430	3.0	285	3.0	285	2.8	200	3.0	285	4.0	1000
17,	5.0	2400									3.0	285	3.3	430	3.0	285	3.0	285	2.8	200	3.0	285	3.7	700
18,	5.0	2400									3.0	285	3.3	430	3.0	285	3.0	285	2.8	200	3.0	285	3.5	540
19,	4.8	2080									3.0	285	3.0	285	3.0	285	3.0	285	2.8	200	3.0	285	3.5	540
20,	4.8	2080									3.0	285	3.0	285	3.0	285	3.0	285	2.8	200	3.0	285	3.5	540
21,	4.6	1780	4.3	1350							3.0	285	3.0	285	3.0	285	3.0	285	2.8	200	3.0	285	3.5	540
22,	4.6	1780	4.3	1350							3.0	285	3.0	285	3.0	285	3.0	285	2.8	200	3.0	285	3.5	540
23,	4.4	1490	5.0	2400							3.0	285	3.0	285	3.0	285	3.0	285	2.8	200	3.0	285	3.5	540
24,	4.4	1490	4.8	2080							3.0	285	3.0	285	3.0	285	3.0	285	2.8	200	4.0	1000	4.0	1000
25,	5.5	3270	4.8	2080							3.0	285	3.0	285	2.9	240	3.0	285	2.8	200	3.6	610	4.5	1630
26,	5.0	2400	4.8	2080							3.0	285	3.0	285	2.8	200	3.0	285	2.8	200	3.4	480	4.5	1630
27,	5.0	2400	7.0	6500							3.0	285	3.0	285	2.8	200	3.0	285	2.8	200	3.2	380	4.3	1350
28,			5.8	3850							3.0	285	3.0	285	3.0	285	3.0	285	2.8	200	3.1	330	4.3	1350
29,											3.0	285	3.0	285	4.2	1220	3.0	285	2.8	200	3.0	285	4.3	1350
30,											3.0	285	3.0	285	3.2	380	3.0	285	2.8	200	3.0	285	4.3	1350
31,													3.0	285	3.0	285			2.8	200			4.3	1350

Note:—January 8-14, January 28 to February 20, frozen. March 10-June 2, no readings taken.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, PA.

1900 Day	JAN.		FEB		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis
1,	3.0	285	*4.4	1490	4.5	1630	3.8	800	3.6	610	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	3.8	800
2,	3.0	285	*4.4	1490	6.0	4250	3.8	800	3.6	610	3.3	430	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	3.6	610
3,	3.0	285	*4.4	1490	4.5	1630	3.8	800	3.5	540	3.9	900	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	3.6	610
4,	3.0	285	*4.4	1490	4.5	1630	3.8	800	3.3	430	3.5	540	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	3.6	610
5,	3.0	285	*4.4	1490	4.3	1350	3.8	800	3.2	380	3.3	430	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	6.6	5580
6,	3.0	285	*4.4	1490	4.3	1350	3.8	800	3.2	380	3.1	330	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	4.6	1780
7,	3.0	285	*4.4	1490	5.0	2400	3.8	800	3.1	330	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	4.6	1780
8,	3.0	285	4.5	1630	4.7	1930	3.8	800	3.0	285	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	4.0	1000
9,	3.0	285	5.0	2400	4.5	1630	3.8	800	3.0	285	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	4.0	1000
10,	3.0	285	4.8	2080	4.5	1630	3.8	800	3.0	285	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	3.8	800
11,	3.0	285	4.6	1780	4.3	1350	3.8	800	3.0	285	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	3.8	800
12,	3.0	285	4.5	1630	4.0	1000	3.8	800	3.0	285	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	3.8	800
13,	3.0	285	6.0	4250	4.0	1000	3.8	800	3.0	285	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	3.6	610
14,	3.0	285	5.5	3270	4.0	1000	3.8	800	3.0	285	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	3.2	380
15,	3.0	285	5.5	3270	4.0	1000	3.8	800	3.0	285	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	*3.2	380
16,	3.0	285	4.5	1630	4.0	1000	3.8	800	3.0	285	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	*3.2	380
17,	3.0	285	4.5	1630	4.0	1000	3.8	800	3.0	285	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	*3.1	330
18,	3.0	285	4.3	1350	*3.9	900	3.8	800	3.0	285	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	*3.1	330
19,	3.0	285	*4.3	1350	3.8	800	4.8	2080	3.6	610	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	3.0	285
20,	3.0	285	*4.3	1350	4.5	1630	4.3	1350	3.6	610	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	3.0	285
21,	8.0	8900	*4.5	1630	5.3	2890	4.1	1110	3.6	610	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	3.0	285
22,	6.5	5350	6.3	4900	4.3	1350	4.0	1000	3.2	380	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	3.0	285
23,	5.7	2400	5.0	2400	4.8	2080	4.0	1000	3.2	380	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	3.0	285
24,	4.8	2080	4.5	1630	4.8	2080	4.0	1000	3.1	330	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	3.0	285
25,	4.6	1780	4.2	1220	4.5	1630	4.0	1000	3.0	285	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	3.0	285
26,	4.6	1780	*4.2	1220	4.3	1350	4.0	1000	3.0	285	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	8.5	10200	3.0	285
27,	4.4	1490	*4.1	1110	4.3	1350	4.0	1000	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	6.5	5350	3.0	285
28,	*4.4	1490	*4.1	1110	4.1	1110	4.0	1000	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	4.5	1630	3.0	385
29,	*4.4	1490	------	------	4.0	1000	4.0	1000	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	4.2	1220	3.0	285
30,	*4.4	1490	------	------	4.0	1000	3.8	800	3.0	285	2.9	240	2.9	240	2.9	240	2.9	240	2.9	240	4.0	1000	3.0	285
31,	*4.4	1490	------	------	3.8	800	------	------	3.0	285	------	------	2.9	240	2.9	240	------	------	2.9	240	------	------	3.0	285

*Interpolated. Frozen.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, PA.

1901.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.
1,	3.0	285	*3.6	610	*3.7	700	4.0	1000	4.0	1000	5.3	2890	3.8	800	3.0	285	5.7	3650	3.0	285	3.0	285	3.0	285
2,	3.0	285	*3.6	610	*3.8	800	4.0	1000	4.0	1000	5.3	2890	3.8	800	3.0	285	5.4	3080	3.0	285	3.0	285	3.0	285
3,	3.0	285	*3.6	610	4.3	1350	4.0	1000	4.0	1000	4.7	1930	3.8	800	3.0	285	5.0	2400	3.0	285	3.0	285	3.0	285
4,	*3.0	285	*3.6	610	4.3	1350	6.0	4250	4.0	1000	4.7	1930	3.8	800	3.0	285	4.3	1350	3.0	285	3.0	285	3.0	285
5,	*3.0	285	*3.6	610	4.3	1350	6.3	4900	4.0	1000	4.3	1350	3.8	800	3.0	285	4.0	1000	3.0	285	3.0	285	3.0	285
6,	*3.0	285	*3.6	610	*4.2	1220	7.0	6500	3.8	800	4.0	1000	3.6	610	3.0	285	4.0	1000	3.0	285	3.0	285	3.0	285
7,	*3.0	285	*3.6	610	*4.1	1110	7.3	7200	3.8	800	4.0	1000	3.6	610	6.4	5120	4.0	1000	3.0	285	3.0	285	3.0	285
8,	*3.0	285	*3.6	610	*4.0	1000	6.8	6040	3.8	800	4.3	1350	3.6	610	4.0	1000	3.8	800	3.0	285	3.0	285	3.0	285
9,	3.0	285	*3.6	610	4.0	1000	6.3	4900	3.8	800	4.0	1000	3.4	480	3.5	540	3.5	540	3.0	285	3.0	285	3.0	285
10,	3.0	285	*3.6	610	7.0	6500	6.3	4900	3.8	800	4.0	1000	3.2	380	3.0	540	3.2	380	3.0	285	3.0	285	5.3	2890
11,	3.0	285	*3.6	610	9.8	14070	6.3	4900	3.8	800	4.0	1000	3.2	380	3.0	285	4.0	1000	3.0	285	3.0	285	4.3	1350
12,	4.3	1350	*3.6	610	6.8	6040	5.8	3850	3.8	800	4.0	1000	3.2	380	3.0	285	3.5	540	3.0	285	3.0	285	4.0	1000
13,	4.0	1000	*3.6	610	5.8	3850	5.4	3080	3.8	800	3.8	800	3.2	380	3.0	285	4.0	1000	3.0	285	3.0	285	4.0	1000
14,	4.0	1000	*3.6	610	5.6	3460	4.8	2080	3.8	800	3.8	800	3.0	205	3.0	285	4.0	1000	3.0	285	3.0	285	4.0	1000
15,	3.8	800	*3.6	610	5.3	2890	4.6	1780	3.8	800	3.8	800	3.0	205	3.0	285	3.8	800	3.0	285	3.5	285	14.0	37800
16,	3.8	800	*3.6	610	5.0	2400	4.4	1490	3.8	800	3.8	800	5.0	2400	3.0	285	3.8	800	3.0	285	3.0	285	12.0	23530
17,	3.8	800	*3.6	610	5.0	2400	4.2	1220	3.8	800	3.8	800	4.2	1000	3.0	285	3.6	610	3.0	285	3.0	285	8.0	8900
18,	3.8	800	*3.6	610	4.5	1630	4.2	1220	3.8	800	3.8	800	4.0	1000	3.5	540	3.6	610	3.0	285	3.0	285	6.0	4250
19,	3.8	800	*3.6	610	4.5	1630	4.0	1000	3.8	800	3.8	800	3.8	1000	4.0	1000	3.4	480	3.0	285	3.0	285	5.5	3270
20,	*3.8	800	*3.6	610	4.5	1630	5.5	3270	3.8	800	3.8	800	3.8	800	3.5	540	3.4	480	3.0	285	3.0	285	4.0	1000
21,	*3.8	800	*3.6	610	6.0	4250	8.5	10200	3.8	800	4.8	2080	3.8	800	3.0	285	3.2	380	3.0	285	3.0	285	4.0	1000
22,	*3.8	800	*3.6	610	5.3	2890	8.0	8900	3.8	800	4.3	1350	3.6	610	3.0	285	3.2	380	3.0	285	3.0	285	*4.0	1000
23,	*3.8	800	*3.6	610	5.0	2400	6.5	5350	4.0	1000	5.0	2400	3.6	610	3.5	285	3.0	285	3.0	285	3.0	285	*4.0	1000
24,	*3.8	800	*3.6	610	4.5	1630	6.0	4250	4.8	2080	4.5	1630	3.6	610	5.0	2890	3.0	285	3.0	285	3.0	285	*4.0	1000
25,	*3.8	800	*3.6	610	4.5	1630	5.5	3270	5.6	3460	4.0	1000	3.2	285	4.0	1350	3.0	285	3.0	285	3.0	285	*4.0	1000
26,	3.6	610	*3.6	610	4.5	1630	5.0	2400	5.6	3460	4.0	1000	3.0	285	4.0	1000	3.0	285	3.0	285	3.0	285	*4.0	1000
27,	*3.8	800	*3.6	610	6.0	4250	4.7	1930	6.0	5580	5.0	1000	3.0	285	3.5	540	3.0	285	3.0	285	3.0	285	*4.0	1000
28,	*3.8	800	*3.6	610	5.5	3270	4.3	1350	6.7	5810	4.0	1000	3.0	285	3.0	285	3.0	285	3.0	285	3.0	285	*4.0	1000
29,	*3.8	800	-----	-----	5.3	2890	4.3	1350	6.7	5815	4.0	1000	3.0	285	3.0	285	3.0	285	3.0	285	3.0	285	4.0	1000
30,	*3.7	700	-----	-----	4.5	2080	4.0	1000	7.7	3130	4.0	1000	3.0	285	3.0	285	3.0	285	3.0	285	3.0	285	4.7	1930
31,	*3.8	800	-----	-----	4.8	2630	-----	-----	6.0	4250	-----	-----	3.0	285	6.1	5810	-----	-----	-----	285	-----	-----	4.3	1350

*Estimated on basis of Newport. Frozen.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, PA.

1902.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.0	1000	*4.2	1220	13.0	30000	5.0	2400	4.0	1000	3.1	330	5.5	3270	3.5	540	3.0	285	3.4	480	3.1	330	3.0	285
2,	4.0	1000	*4.2	1220	9.0	11600	4.8	2080	3.8	800	3.1	330	4.5	1630	4.3	1350	3.0	285	3.3	430	3.1	330	3.1	330
3,	4.0	1000	*4.2	1220	7.5	7680	4.6	1780	3.8	800	3.1	330	4.2	1220	3.6	610	3.0	285	3.2	380	3.1	330	4.0	1000
4,	4.0	1000	*4.2	1220	6.0	4250	4.6	1780	3.8	800	3.1	330	5.4	3080	3.5	540	3.0	285	3.0	285	3.1	330	4.0	1000
5,	4.0	1000	*4.2	1220	5.0	2400	4.4	1490	3.6	610	3.1	330	5.0	2400	3.4	480	3.0	285	3.0	285	3.1	330	3.8	800
6,	4.0	1000	*4.2	1220	5.0	2400	4.4	1490	3.6	610	3.1	330	4.6	1780	3.4	480	3.0	285	3.3	430	3.0	285	3.7	700
7,	4.0	1000	*4.2	1220	4.8	2080	5.4	3080	3.6	610	3.0	285	4.4	1490	3.4	480	3.0	285	3.1	330	3.0	285	3.6	610
8,	4.0	1000	*4.2	1220	4.8	2080	8.0	8900	3.6	610	3.0	285	4.2	1220	3.4	480	3.0	285	3.0	285	3.0	285	3.7	700
9,	4.0	1000	*4.2	1220	5.0	2400	12.0	23530	3.6	610	3.0	285	4.2	1220	3.3	430	3.0	285	3.0	285	3.0	285	3.6	610
10,	4.0	1000	*4.2	1220	5.0	2400	8.5	10200	3.6	610	3.0	285	4.2	1220	3.3	430	3.0	285	3.0	285	3.0	285	*3.6	610
11,	4.0	1000	*4.2	1220	6.0	4250	7.0	6500	3.6	610	3.0	285	4.0	1000	3.3	430	3.0	285	3.0	285	3.0	285	*3.6	610
12,	4.0	1000	*4.2	1220	6.5	5350	6.3	4900	3.6	610	3.3	430	3.9	900	3.4	480	3.0	285	4.1	1110	3.0	285	6.6	5580
13,	4.0	1000	*4.2	1220	9.0	11600	6.0	4250	3.6	610	3.2	380	3.7	700	3.3	430	3.0	285	4.1	1110	3.0	285	5.1	2560
14,	4.0	1000	*4.2	1220	7.3	7200	5.5	3270	3.6	610	3.2	380	3.6	610	3.2	380	2.9	240	3.7	700	3.0	285	4.7	1930
15,	4.0	1000	*4.2	1220	6.3	4900	5.0	2400	3.6	610	3.2	380	3.5	540	3.1	330	2.9	240	3.6	610	3.0	285	4.3	1350
16,	4.0	1000	*4.2	1220	6.3	4900	4.8	2080	3.6	610	3.2	380	3.4	480	3.1	330	2.9	240	3.5	540	3.0	285	4.4	1490
17,	4.0	1000	*4.2	1220	6.0	4250	4.6	1780	3.6	610	3.2	380	3.4	480	3.0	285	2.9	240	3.4	480	3.0	285	5.9	4050
18,	4.0	1000	*4.2	1220	6.0	4250	4.4	1490	3.4	480	3.2	380	3.4	480	3.0	285	2.9	240	3.3	430	3.0	285	5.0	2400
19,	4.0	1000	*4.2	1220	6.0	4250	4.4	1490	3.4	480	3.2	380	3.4	480	3.0	285	2.9	240	3.2	380	3.0	285	4.6	1780
20,	4.0	1000	*4.2	1220	5.5	3270	4.0	1000	3.4	480	3.2	380	3.6	610	3.0	285	2.9	240	3.2	380	3.0	285	4.7	1930
21,	4.0	1000	*4.2	1220	5.0	2400	4.0	1000	3.4	480	3.1	330	3.6	610	3.0	285	2.9	240	3.1	330	3.0	285	5.5	3270
22,	6.3	4900	*4.2	1220	5.0	2400	4.0	1000	3.4	480	3.1	330	3.4	480	3.0	285	2.9	240	3.1	330	3.0	285	7.9	8650
23,	5.0	2400	*4.2	1220	5.0	2400	4.0	1000	3.4	480	3.1	330	3.4	480	3.0	285	2.9	240	3.1	330	3.0	285	6.6	5580
24,	4.0	1000	*4.2	1220	4.8	2080	4.0	1000	3.3	430	3.1	330	3.4	480	3.0	285	2.9	240	3.1	330	3.0	285	5.6	3460
25,	4.0	1000	*4.2	1220	4.8	2080	3.8	800	3.2	380	3.0	285	3.4	480	3.0	285	2.9	240	3.1	330	3.0	285	5.2	2720
26,	5.5	3270	5.0	2400	4.8	2080	3.8	800	3.2	380	4.8	2080	3.4	480	3.0	285	3.2	380	3.1	330	3.0	285	4.8	2080
27,	5.0	2400	7.3	7200	4.6	1780	3.8	800	3.2	380	3.8	800	3.3	430	3.0	285	3.2	380	3.1	330	3.3	430	4.6	1780
28,	4.5	1630	9.7	13740	4.6	1780	3.8	800	3.2	380	3.5	540	3.3	430	3.0	285	3.2	380	4.7	1930	3.3	430	4.0	1000
29,	4.5	1630	------	------	4.6	1780	4.0	1000	3.2	380	3.5	540	3.5	540	3.0	285	3.2	380	3.7	700	3.2	380	*4.0	1000
30,	4.5	1630	------	------	4.6	1780	4.2	1220	3.2	380	4.8	2080	4.5	1630	3.0	285	3.0	285	3.3	430	3.1	330	*4.0	1000
31,	4.5	1630	------	------	5.0	2400	------	------	3.2	380	--	--	4.0	1000	3.0	285	3.0	------	3.2	380	------	------	4.0	1000

*Interpolated on basis of Newport. Frozen.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, PA.

1903. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.9	900	5.5	3270	8.7	10760	5.0	2400	3.8	800	3.4	480	4.6	1780	3.3	430	4.8	2080	3.0	285	3.1	330	*3.4	480
2,	*4.4	1490	5.0	2400	6.6	5580	4.6	1780	3.7	700	3.4	480	4.1	1110	3.3	430	4.4	1490	3.0	285	3.1	330	*3.4	480
3,	4.8	2080	7.3	7200	5.9	4050	4.6	1780	3.7	700	3.4	480	4.1	1110	3.3	430	4.2	1220	3.0	285	3.1	330	*3.4	480
4,	5.8	3850	†10.2	15450	5.4	3080	4.5	1630	3.8	800	3.3	430	4.1	1110	3.3	430	4.0	1000	3.0	285	3.1	330	*2.3	430
5,	5.0	2400	9.0	11600	5.1	2560	4.4	1490	3.7	700	3.3	430	5.0	2400	3.4	480	4.0	1000	3.0	285	3.1	330	*2.3	430
6,	4.7	1930	6.7	5810	5.1	2560	4.2	1220	3.7	700	3.2	380	8.2	9400	3.4	480	4.0	1000	4.0	1000	3.1	330	3.3	430
7,	4.5	1630	5.9	4050	5.0	2400	4.1	1110	3.6	610	3.2	380	5.5	3270	4.1	1110	4.0	1000	3.5	540	3.1	330	3.3	430
8,	4.4	1490	5.4	3080	5.1	2560	4.5	1630	3.6	610	4.5	1630	4.6	1780	3.6	610	3.8	800	3.5	540	3.1	330	3.3	430
9,	*4.3	1350	5.0	2400	6.5	5350	5.1	2560	3.5	540	4.0	1000	4.4	1490	3.4	480	4.4	1490	5.0	2400	3.1	330	3.2	380
10,	*4.3	1350	4.8	2080	5.7	3650	4.5	1630	3.5	540	4.5	1630	4.2	1220	3.4	480	4.0	1000	4.2	1220	3.1	330	3.2	380
11,	*4.3	1350	4.7	1930	5.5	3270	4.4	1490	3.4	480	4.1	1110	4.0	1000	3.4	480	4.2	1220	4.0	1000	3.1	330	3.2	380
12,	*4.2	1220	5.7	3650	5.2	2720	4.6	1780	3.4	480	4.4	1490	4.1	1110	3.3	430	4.0	1000	4.0	1000	3.3	430	3.2	380
13,	*4.2	1220	5.5	3270	5.0	2400	4.7	1930	3.4	480	4.1	1110	3.9	900	3.3	430	3.9	900	3.9	900	3.3	430	3.2	380
14,	*4.2	1220	5.0	2400	4.7	1930	5.6	3460	3.4	480	3.9	900	3.9	900	3.2	380	3.8	800	3.8	800	3.3	438	3.2	380
15,	*4.2	1220	4.9	2240	4.5	1630	7.2	6960	3.4	480	4.1	1110	3.9	900	3.2	380	3.5	540	3.6	610	3.2	380	*3.2	380
16,	*4.2	1220	7.0	6500	4.5	1630	7.6	7920	3.4	480	4.0	1000	3.8	800	3.2	380	3.5	540	3.6	610	3.2	380	*3.2	380
17,	*4.2	1220	5.9	4050	4.4	1490	6.5	5350	3.4	480	3.9	900	3.6	610	3.1	330	3.6	610	3.8	800	4.3	1350	*3.1	330
18,	*4.2	1220	5.5	3270	4.3	1350	5.8	3850	3.4	480	3.7	700	3.6	610	3.1	330	3.9	900	4.6	1780	4.2	1220	*3.3	430
19,	*4.2	1220	*5.0	2400	4.2	1220	5.3	2890	3.4	480	3.6	610	6.1	4460	3.2	380	3.7	700	4.3	1350	4.0	1000	*3.3	430
20,	*4.2	1220	*4.8	2080	4.0	1000	5.0	2400	3.4	480	3.7	700	4.8	2080	3.5	540	3.5	540	4.3	1350	3.8	800	*3.4	480
21,	*4.2	1220	*4.6	1780	4.0	1000	4.8	2080	3.3	430	4.2	1220	4.6	1780	3.3	430	3.4	480	4.0	1000	3.7	700	*3.5	540
22,	*4.2	1220	*4.4	1490	4.5	1636	4.6	1780	3.3	430	3.9	900	4.4	1490	3.2	380	3.3	430	3.9	900	3.7	700	*3.6	610
23,	*4.2	1220	*4.2	1220	5.3	2890	4.4	1490	3.3	430	4.1	1110	4.2	1220	3.1	330	3.3	430	3.7	700	3.7	700	*3.7	700
24,	*4.2	1220	4.4	1490	8.4	9920	4.3	1350	3.5	540	6.0	4250	4.0	1000	3.0	285	3.2	380	3.6	610	3.7	700	*3.7	700
25,	*4.2	1220	4.3	1350	6.5	5350	4.2	1220	3.8	800	5.2	2720	3.9	900	3.0	285	3.2	380	3.4	480	3.6	610	3.7	700
26,	*4.2	1220	4.3	1350	5.6	3460	4.1	1110	3.5	540	4.7	1930	3.8	800	3.2	380	3.2	380	3.3	430	3.5	540	3.8	800
27,	*4.2	1220	4.3	1350	5.2	2720	4.1	1110	3.5	540	4.4	1490	3.7	700	3.1	330	3.2	380	3.3	430	*3.5	540	*3.8	800
28,	*4.2	1220	8.9	11320	4.9	2240	4.0	1000	3.5	540	4.2	1220	3.6	610	‡7.7	8160	3.2	380	3.2	380	*3.5	540	*3.8	800
29,	4.4	1490	------	------	4.6	1780	4.0	1000	3.6	610	4.2	1220	3.5	540	8.0	8900	3.1	330	3.2	380	*3.5	540	*3.8	800
30,	5.1	4050	------	------	4.5	1630	3.9	900	3.5	540	6.0	4250	3.4	480	5.6	3460	3.0	285	3.2	380	*3.5	540	*3.8	800
31,	6.3	4900	------	------	6.0	4250	------	------	3.5	540	------	------	3.3	430	4.8	2080	------	------	3.1	330	------	------	*3.9	900

†Maximum 11.0 feet=18,620 sec. ft.
‡Maximum 8.9 at 3 P. M.=11,320 sec. ft.
*Interpolated. Frozen. Estimated from Newport data.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, PA.

1904. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.	GH	Dis.
1,	*3.9	900	*3.9	900	7.4	7440	7.8	8400	5.1	2500	4.0	1000	4.0	1000	3.4	480	3.1	330	2.9	240	2.9	240	2.9	240
2,	*3.9	900	*4.5	1630	5.7	3650	8.5	10200	4.8	2080	4.0	1000	3.7	700	4.1	1110	3.1	330	2.9	240	2.9	240	2.9	240
3,	*3.9	900	*4.5	1630	6.0	4250	6.5	5350	4.6	1780	4.0	1000	3.6	610	3.9	900	3.1	330	2.9	240	2.9	240	2.9	240
4,	*3.9	900	*4.5	1630	7.7	8160	5.7	3650	4.5	1630	3.9	900	3.5	540	3.5	540	3.1	330	2.9	240	2.9	240	2.9	240
5,	*3.9	900	*4.8	2080	5.4	3080	5.2	2720	4.2	1220	5.0	2400	3.4	480	3.4	480	3.1	330	2.9	240	2.9	240	2.9	240
6,	*3.9	900	*4.9	2240	4.8	2080	4.9	2240	4.0	1000	4.1	1110	3.6	610	3.5	540	3.0	285	2.9	240	2.9	240	*2.9	240
7,	*3.9	900	5.0	2400	4.6	1780	4.8	2080	4.0	1000	4.0	1000	4.5	1630	3.4	480	3.0	285	3.0	285	2.9	240	2.9	240
8,	*3.9	900	†8.6	10480	8.2	9400	4.6	1780	3.9	900	3.8	800	6.6	5580	3.4	480	3.0	285	2.9	240	2.9	240	2.9	240
9,	†3.9	900	5.4	3080	6.2	4680	5.3	2890	3.9	900	3.7	700	5.5	3270	3.3	430	3.0	285	3.0	285	2.9	240	2.9	240
10,	*3.9	900	4.9	2240	5.6	3400	5.3	2890	3.8	800	4.7	1930	7.7	8160	3.3	430	3.1	330	3.0	285	2.9	240	*2.9	240
11,	*3.9	900	4.6	1780	5.2	2720	5.0	2400	3.8	800	4.0	1000	6.2	4680	3.3	430	3.1	330	3.0	285	2.9	240	*2.9	240
12,	*3.9	900	4.4	1490	5.2	2720	4.9	2240	3.7	700	3.9	900	5.3	2890	3.3	430	3.0	285	2.9	240	3.0	285	*2.9	240
13,	*3.9	900	*4.4	1490	4.7	1930	4.7	1930	3.7	700	3.7	700	4.9	2240	3.3	430	3.0	285	3.0	285	2.9	240	*2.9	240
14,	*3.9	900	*4.4	1490	4.6	1780	4.6	1780	3.7	700	3.6	610	4.5	1630	3.2	380	3.0	285	3.0	285	2.9	240	*2.9	240
15,	*3.9	900	*4.5	1630	4.5	1630	4.5	1630	3.8	800	3.6	610	4.3	1350	3.2	380	3.0	285	3.0	285	2.9	240	*2.9	240
16,	*3.9	900	*4.5	1630	4.3	1350	4.4	1490	3.8	800	4.1	1110	4.1	1110	3.2	380	3.0	285	3.0	285	2.9	240	*2.9	240
17,	*3.9	900	*4.6	1780	4.1	1110	4.3	1350	3.7	700	3.7	700	4.0	1000	3.3	430	3.0	285	3.0	285	2.9	240	*2.9	240
18,	*3.9	900	*4.6	1780	4.4	1490	4.2	1220	3.7	700	3.5	540	3.9	900	3.5	540	3.0	285	3.0	285	2.9	240	*2.9	240
19,	*3.9	900	*4.6	1780	4.3	1350	4.1	1110	7.1	6730	3.5	540	3.8	800	3.2	380	3.0	285	3.0	285	2.9	240	*2.9	240
20,	*3.9	900	*4.6	1780	5.1	2560	4.1	1110	5.4	3080	3.7	700	3.9	900	3.4	480	3.0	285	3.0	285	2.9	240	*2.9	240
21,	*3.9	900	*4.6	1780	5.1	2560	4.0	1000	4.9	2240	4.6	1780	3.7	700	3.4	480	3.0	285	3.0	285	2.9	240	*2.9	240
22,	*5.0	2400	*4.6	1780	4.9	2240	4.0	1000	4.6	1780	4.3	1350	3.7	700	3.3	430	3.0	285	3.2	380	2.9	240	*2.9	240
23,	7.3	7200	*4.8	2080	7.5	7680	3.9	900	4.4	1490	3.9	900	3.6	610	3.3	430	3.0	285	3.0	285	2.9	240	*2.9	240
24,	6.0	4250	5.5	3270	6.6	5580	3.9	900	4.3	1350	3.6	610	3.8	800	3.2	380	3.0	285	3.0	285	2.9	240	*2.9	240
25,	5.1	2560	5.0	2400	5.8	3850	3.9	900	4.2	1220	3.5	540	3.7	700	3.2	380	3.0	285	3.0	285	2.9	240	*3.3	430
26,	4.7	1930	4.2	1220	5.8	3850	3.9	900	4.0	1000	3.5	540	3.7	700	3.1	330	3.0	285	2.9	240	2.9	240	*3.4	480
27,	*4.4	1490	4.0	1000	5.5	3270	4.1	1110	4.0	1000	3.4	480	3.6	610	3.1	330	3.0	285	2.9	240	2.9	240	*3.6	610
28,	*4.2	1220	3.7	700	5.1	2560	5.1	2500	3.9	900	3.4	480	3.5	540	3.1	330	3.0	285	2.9	240	2.9	240	*3.6	610
29,	*4.1	1110	3.8	800	4.8	2080	5.9	4050	3.8	800	3.4	480	3.5	540	3.1	330	3.0	285	2.9	240	2.9	240	*3.6	610
30,	*4.0	1000	------	------	4.6	1780	5.5	3270	3.7	700	3.4	480	3.5	540	3.1	330	3.0	285	2.9	240	2.9	240	*3.6	610
31,	*3.9	900	------	------	4.5	1630	------	------	4.5	1630	------	------	3.4	480	3.1	330	------	------	2.9	240	------	------	*3.6	610

†Maximum 9.0 feet during night=11,600 sec. ft.
*Estimated on basis of Newport. Frozen.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, PA.

1905.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	*3.6	610	3.6	610	3.5	540	4.5	1350	3.6	610	4.8	2080	3.5	540	3.4	480	3.4	480	3.1	330	3.5	540	4.6	1780
2,	3.6	610	3.6	610	3.7	700	4.2	1220	3.5	540	4.1	1110	3.5	540	3.3	430	3.4	480	3.1	330	3.5	540	4.3	1350
3,	3.6	610	3.7	700	3.6	610	4.1	1110	3.5	540	3.9	900	3.7	700	3.2	380	3.4	480	3.7	700	3.4	480	7.2	6960
4,	3.3	430	3.7	700	3.4	480	4.0	1000	3.5	540	3.7	700	3.5	540	3.2	380	3.4	480	3.4	480	3.4	480	7.0	6500
5,	*3.3	430	3.7	700	3.5	540	4.0	1000	3.4	480	3.7	700	3.5	540	3.2	380	3.3	430	3.3	430	3.4	480	5.5	3270
6,	*3.3	430	3.9	900	3.9	900	4.0	1000	3.4	480	3.6	610	3.5	540	3.2	380	3.3	430	3.2	380	3.5	540	5.0	2400
7,	*3.3	430	3.9	900	4.3	1350	4.2	1220	3.7	700	4.8	2080	3.5	540	3.2	380	3.2	380	3.2	380	3.7	700	4.7	1930
8,	*3.3	430	3.9	900	4.2	1220	4.0	1000	3.7	700	7.1	6730	3.4	480	3.2	380	3.2	380	3.2	380	3.6	610	4.5	1630
9,	*3.3	430	3.9	900	5.3	2890	3.9	900	3.5	540	5.5	3270	3.6	610	3.1	330	3.4	480	3.2	380	3.5	540	4.3	1350
10,	*3.4	480	4.0	1000	5.5	3270	3.8	800	3.5	540	4.9	2240	3.4	480	3.1	330	3.2	380	3.1	330	3.5	540	4.2	1220
11,	3.6	610	3.9	900	5.2	2720	4.9	2240	3.6	610	4.6	1780	3.6	610	3.1	330	3.3	430	3.3	430	3.4	480	4.0	1000
12,	3.3	430	3.9	900	5.0	2400	4.9	2240	3.9	900	4.7	1930	3.4	480	4.4	1490	4.7	1930	4.7	1930	3.4	480	3.9	900
13,	3.9	900	3.9	900	4.9	2240	4.6	1780	4.0	1000	4.3	1350	3.5	540	3.9	900	3.9	900	3.8	800	3.4	480	3.8	800
14,	4.3	1350	3.9	900	4.9	2240	4.4	1490	3.9	900	4.1	1110	4.3	1350	3.9	900	3.6	610	3.6	610	3.3	430	3.7	700
15,	4.0	1000	4.0	1000	4.7	1930	4.3	1350	4.5	1630	3.9	900	3.9	900	6.0	4250	3.5	540	3.5	540	3.3	430	3.6	610
16,	4.0	1000	3.9	900	4.5	1630	4.2	1220	4.2	1220	3.9	900	3.6	610	5.2	2720	3.5	540	3.4	480	3.3	430	3.5	540
17,	4.2	1220	4.0	1000	5.3	2890	4.1	1110	4.1	1110	3.7	700	3.5	540	4.4	1490	3.4	480	3.4	480	3.3	430	3.6	610
18,	3.9	900	3.9	900	6.4	5120	4.0	1000	4.0	1000	3.7	700	3.4	480	4.0	1000	3.5	540	3.3	430	3.3	430	3.5	540
19,	3.3	430	3.8	800	7.3	7200	3.9	900	4.0	1000	5.2	2720	3.3	430	3.8	800	3.4	480	3.3	430	3.3	430	3.5	540
20,	3.4	480	3.8	800	8.0	8900	3.8	800	3.9	900	4.1	1110	3.3	430	3.6	610	3.4	480	4.1	1110	3.2	380	3.5	540
21,	3.5	540	3.7	700	†9.0	11600	4.1	1110	3.7	700	3.8	800	3.3	430	3.6	610	3.4	480	4.0	1000	3.2	380	4.1	1110
22,	3.5	540	3.7	700	8.2	9400	4.2	1220	3.7	700	4.1	1110	3.3	430	3.5	540	3.3	430	3.8	800	3.2	380	5.3	2890
23,	3.5	540	3.7	700	6.5	5350	4.0	1000	3.6	610	5.0	2400	3.4	480	3.5	540	3.3	430	3.8	800	3.1	330	4.6	1780
24,	3.3	430	3.5	540	5.8	3850	3.9	900	3.5	540	4.2	1220	4.0	1000	3.4	480	3.3	430	3.7	700	3.1	330	4.5	1630
25,	3.4	480	3.6	610	6.7	5810	3.9	900	3.5	540	4.4	1490	3.5	540	6.0	4250	3.2	380	3.6	610	3.2	380	4.2	1220
26,	3.2	380	3.4	480	5.9	4050	3.8	800	3.4	480	4.1	1110	3.4	480	4.5	1630	3.2	380	3.6	610	3.2	380	4.1	1110
27,	3.8	800	4.1	1110	5.9	4050	3.8	800	3.8	800	3.9	900	3.3	430	3.9	900	3.1	330	3.6	610	3.2	380	4.0	1000
28,	3.8	800	3.7	700	5.3	2890	3.8	800	3.5	540	3.7	700	3.2	380	3.7	700	3.1	330	3.5	540	3.2	380	3.9	900
29,	3.7	700	------	------	5.0	2400	3.7	700	3.4	480	3.7	700	3.2	380	3.5	540	3.1	330	3.5	540	4.7	1930	4.3	1350
30,	3.9	900	------	------	4.7	1930	3.7	700	3.3	430	3.6	610	3.8	800	3.5	540	3.1	330	3.4	480	5.7	3650	4.8	2080
31,	3.6	610	------	------	4.5	1630	------	------	3.5	540	------	------	3.6	610	3.5	540	------	------	3.4	480	------	------	4.4	1490

†Maximum 9.7 during day=13.740 sec.-ft.
*Interpolated. Frozen. Estimated from Newport data.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, PA.

1906.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.2	1220	4.1	1110	3.4	480	6.8	6040	3.7	700	3.3	430	3.3	430	3.2	380	3.3	430	3.0	285	3.2	380	3.0	285
2,	4.0	1000	4.0	1000	3.5	540	6.2	4680	3.6	610	3.3	430	3.3	430	3.1	330	3.2	380	3.0	285	3.2	380	3.0	285
3,	4.0	1000	3.9	900	3.4	480	6.0	4250	4.4	1490	3.3	430	3.2	380	3.2	380	3.2	380	3.0	285	3.0	285	3.0	285
4,	6.0	4250	4.2	1220	5.2	2720	5.8	3850	3.9	900	3.2	380	3.2	380	3.6	610	3.4	480	3.0	285	3.1	330	3.1	330
5,	5.5	3270	3.9	900	4.1	1110	5.9	4050	3.8	800	3.2	380	3.2	380	3.5	540	3.3	430	3.0	285	3.0	285	3.0	285
6,	4.9	2240	3.8	800	3.8	800	6.0	4250	3.8	800	3.3	430	3.2	380	3.3	430	3.2	380	3.0	285	3.0	285	3.0	285
7,	4.5	1630	4.0	1000	3.9	900	5.6	3460	3.7	700	3.5	540	3.1	330	3.3	430	3.1	330	3.0	285	3.0	285	4.2	1220
8,	4.4	1490	3.9	900	3.8	800	5.2	2720	3.7	700	3.4	480	3.1	330	3.5	540	3.1	330	3.0	285	3.0	285	3.6	610
9,	4.3	1350	3.6	610	3.7	700	5.1	2560	3.6	610	3.3	430	3.1	330	5.1	2560	3.1	330	3.0	285	3.0	285	3.3	430
10,	4.3	1350	3.9	900	3.8	800	7.6	7920	3.6	610	3.3	430	3.1	330	4.0	1000	3.1	330	3.0	285	3.0	285	3.5	540
11,	4.4	1490	3.6	610	3.7	700	6.3	4900	3.5	540	3.3	430	3.1	330	6.9	6270	3.1	330	3.0	285	3.0	285	4.8	2080
12,	4.1	1110	3.8	800	3.8	800	5.7	3650	3.5	540	3.2	380	3.1	330	4.8	2080	3.1	330	3.0	285	3.0	285	4.2	1220
13,	4.1	1110	3.6	610	4.2	1220	5.2	2720	3.4	480	3.2	380	3.1	330	4.2	1220	3.1	330	3.0	285	3.0	285	3.9	900
14,	4.0	1000	3.5	540	3.9	900	4.9	2240	3.5	540	3.2	380	3.1	330	3.9	900	3.2	380	3.0	285	3.0	285	3.9	900
15,	4.0	1000	3.5	540	3.9	900	6.1	4460	3.5	540	3.2	380	3.0	285	3.7	700	3.2	380	3.0	285	3.0	285	3.9	900
16,	4.1	1110	3.5	540	3.8	800	5.2	2720	3.4	480	3.1	330	3.0	285	3.6	610	3.1	330	2.9	240	3.0	285	3.9	900
17,	4.5	1630	3.4	480	3.7	700	5.0	2400	3.4	480	3.2	380	3.4	480	3.5	540	3.0	285	3.0	285	3.0	285	3.8	800
18,	4.1	1110	3.3	430	3.6	610	4.7	1930	3.4	480	3.4	480	3.5	540	3.4	480	3.0	285	3.0	285	3.0	285	4.0	1000
19,	4.6	1780	3.3	430	3.7	700	4.6	1780	3.3	430	3.4	480	3.3	430	3.5	540	3.0	285	3.0	285	3.1	330	3.7	700
20,	4.2	1220	3.3	430	3.5	540	4.5	1630	3.3	430	3.4	480	3.2	380	5.7	3650	3.0	285	4.5	1630	3.2	380	3.5	540
21,	4.4	1490	3.3	430	3.7	700	4.4	1490	3.3	430	3.3	430	3.1	330	4.3	1350	3.1	330	3.5	540	3.2	380	3.9	900
22,	4.6	1780	4.2	1220	3.8	800	4.2	1220	3.3	430	3.3	430	3.6	610	4.6	1780	3.0	285	3.4	480	3.0	285	3.8	800
23,	6.7	5810	3.7	700	3.6	610	4.2	1220	3.3	430	3.4	480	3.7	700	4.7	1930	3.1	330	3.4	480	3.0	285	3.7	700
24,	6.5	5350	3.5	540	3.6	610	4.1	1110	3.2	380	4.1	1110	3.5	540	4.0	1000	3.0	285	3.4	480	3.0	285	3.6	610
25,	5.6	3460	3.5	540	3.6	610	4.0	1000	3.2	380	3.6	610	3.3	430	3.8	800	3.0	285	3.1	330	3.0	285	3.5	540
26,	5.1	2560	3.6	610	3.6	610	4.0	1000	3.2	380	3.4	480	3.2	380	3.6	610	3.0	285	3.2	380	3.0	285	3.8	800
27,	4.8	2080	3.5	540	4.0	1000	3.9	900	3.3	430	3.4	480	3.2	380	3.6	610	3.0	285	3.1	330	3.0	285	4.0	1000
28,	4.7	1930	3.5	540	7.2	7200	3.8	800	3.5	540	3.3	430	4.1	1110	3.7	700	3.0	285	3.3	430	3.0	285	3.6	610
29,	4.5	1630	-----	-----	5.8	3850	3.8	800	3.9	900	3.5	540	3.4	480	3.5	540	3.0	285	3.4	480	3.0	285	3.6	610
30,	4.3	1350	-----	-----	6.1	4460	3.7	700	3.5	540	3.4	480	3.3	430	3.4	480	3.0	285	3.4	480	3.0	285	3.9	900
31,	4.2	1220	-----	-----	7.9	8650	-----	-----	3.4	480	-----	-----	3.2	380	3.4	480	-----	-----	3.3	430	-----	-----	5.5	3270

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, PA.

1907.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	D.s.
1,	7.1	6730	4.0	1000	3.3	430	4.4	1490	4.2	1220	3.5	540	4.4	1490	3.2	380	3.1	330	3.6	610	3.3	430	3.5	540
2,	5.6	3460	3.9	900	3.4	480	4.3	1350	4.1	1110	5.8	3850	4.8	2080	3.2	380	3.1	330	3.3	430	3.6	610	4.0	1000
3,	5.1	2560	4.0	1000	4.0	1000	4.3	1350	4.0	1000	5.3	2890	4.2	1220	3.1	330	3.2	380	3.2	380	5.7	3650	3.8	800
4,	5.0	2400	3.8	800	3.7	700	4.2	1220	4.0	1000	4.8	2080	4.0	1000	3.2	380	4.5	1630	3.2	380	4.6	1780	3.8	800
5,	5.0	2400	3.6	610	3.7	700	4.2	1220	4.2	1220	4.6	1780	3.9	900	3.1	330	4.1	1110	3.8	800	4.3	1350	3.6	610
6,	4.7	1930	4.0	1000	3.9	900	4.1	1110	4.0	1000	4.7	1930	3.8	800	3.1	330	4.1	1110	3.6	610	4.2	1220	3.8	800
7,	4.5	1630	3.8	800	3.9	900	4.0	1000	4.4	1490	4.4	1490	3.8	800	3.3	430	3.7	700	3.4	480	5.0	2400	3.5	540
8,	4.5	1630	3.8	800	3.7	700	4.0	1000	4.4	1490	4.2	1220	3.7	700	3.2	380	3.5	540	3.3	430	5.0	2400	3.8	800
9,	4.8	2080	4.0	1000	3.7	700	4.2	1220	4.8	2080	4.1	1110	3.6	610	3.1	330	3.4	480	3.5	540	4.6	1780	3.6	610
10,	4.3	1350	3.7	700	3.8	800	4.6	1780	5.6	3460	4.0	1000	3.6	610	4.7	1930	3.5	540	3.4	480	4.8	2080	4.3	1350
11,	4.3	1350	4.1	1110	3.7	700	4.3	1350	5.2	2720	3.9	900	3.5	540	3.5	540	5.6	3460	3.2	380	4.2	1220	6.4	5120
12,	4.3	1350	3.7	700	3.8	800	4.1	1110	4.8	2080	5.1	2560	3.6	610	3.4	480	4.5	1630	3.2	380	4.1	1110	5.1	2560
13,	6.3	4900	3.8	800	5.0	2400	4.1	1110	4.6	1780	4.6	1780	3.6	610	3.2	380	3.9	900	3.2	380	3.8	800	4.8	2080
14,	6.1	4460	3.9	900	12.9	29290	4.2	1220	4.4	1490	5.6	3460	3.5	540	3.2	380	3.7	700	3.3	430	3.8	800	4.5	1630
15,	7.2	6960	3.7	700	11.2	19530	4.1	1110	4.3	1350	5.3	2890	3.4	480	3.1	330	3.6	610	3.3	430	3.7	700	4.4	1490
16,	6.2	4680	3.5	540	8.3	9660	4.0	1000	4.2	1220	4.8	2080	3.3	430	3.1	330	3.6	610	3.2	380	3.6	610	4.3	1350
17,	5.6	3460	3.5	540	7.9	8650	4.0	1000	4.1	1110	4.5	1630	3.7	700	3.1	330	3.5	540	3.2	380	3.6	610	4.2	1220
18,	5.2	2720	3.5	540	7.6	7920	4.0	1000	4.0	1000	4.3	1350	3.9	900	3.1	330	3.4	480	3.1	330	3.6	610	4.1	1110
19,	5.1	2560	3.5	540	7.2	6960	4.0	1000	4.0	1000	4.1	1110	3.7	700	3.1	330	3.3	430	3.1	330	3.6	610	4.0	1000
20,	6.3	4900	3.5	540	11.4	20480	4.1	1110	3.9	900	4.3	1350	3.5	540	3.1	330	3.5	540	3.1	330	3.7	700	3.6	610
21,	6.6	5580	3.5	540	8.0	8900	4.1	1110	3.8	800	4.1	1110	3.4	480	3.1	330	3.4	480	3.1	330	3.6	610	3.6	610
22,	5.5	3270	3.5	540	6.8	6040	4.0	1000	3.7	700	4.1	1110	3.4	480	3.1	330	3.6	610	3.1	330	4.0	1000	3.9	900
23,	5.6	3460	3.4	480	6.3	4900	3.9	900	3.7	700	5.6	3460	3.4	480	3.1	330	3.5	540	3.2	380	3.9	900	3.6	610
24,	5.0	2400	3.6	610	5.8	3850	5.3	2890	3.7	700	4.2	1220	3.2	380	3.2	380	3.9	900	3.1	330	4.0	1000	6.7	5810
25,	4.7	1930	3.6	610	5.3	2890	4.9	2240	3.7	700	4.9	2240	3.2	380	3.7	700	3.6	610	3.1	330	4.4	1490	5.8	3850
26,	4.6	1780	3.8	800	5.0	2400	4.7	1930	3.7	700	4.1	1110	3.2	380	3.4	480	3.4	480	3.1	330	4.5	1630	5.5	3270
27,	4.2	1220	3.4	480	5.1	2560	4.6	1780	3.8	800	4.0	1000	3.5	380	3.2	380	3.3	430	3.1	330	4.0	1000	5.1	2560
28,	4.4	1490	3.4	480	5.0	2400	4.4	1490	3.8	800	3.8	800	3.2	380	3.1	330	3.2	380	4.1	1110	3.9	900	5.0	2400
29,	4.3	1350	------	------	4.9	2240	4.2	1220	3.7	700	3.7	700	3.1	330	3.1	330	3.3	430	3.7	700	4.0	1000	5.9	4050
30,	4.4	1490	------	------	4.7	1930	4.2	1220	3.6	610	5.0	2400	3.1	330	3.1	330	3.8	800	3.3	430	4.0	1000	5.4	3080
31,	4.1	1110	------	------	4.5	1630	------	------	3.5	540	------	------	3.1	330	5.2	380	------	------	3.2	380	------	------	5.6	3460

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, PA.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.0	2400	3.6	610	3.8	800	5.2	2720	4.2	1220	5.4	3080	3.15	355	3.15	355	2.85	220	2.5	100	2.5	100	2.7	160
2,	4.8	2080	3.7	700	4.0	1000	5.2	2720	4.0	1000	5.05	2480	3.3	430	3.1	330	2.9	240	2.6	130	2.7	160	2.8	200
3,	4.6	1780	4.0	1000	4.9	2240	5.0	2400	4.1	1110	4.75	2005	3.3	430	3.15	355	3.1	330	2.7	160	2.8	200	2.5	100
4,	4.5	1630	4.2	1220	4.7	1930	4.8	2080	4.0	1000	4.55	1705	3.7	700	2.85	220	2.85	220	2.5	100	2.5	100	2.5	100
5,	4.4	1490	4.2	1220	4.7	1930	4.7	1930	4.05	1055	4.35	1420	3.6	610	3.15	355	2.8	200	2.6	130	2.5	100	2.5	100
6,	4.3	1350	3.7	700	4.8	2080	4.8	2080	4.35	1420	4.35	1420	3.4	480	3.2	380	2.75	180	2.7	160	2.6	130	2.6	130
7,	4.1	1110	3.9	900	7.7	8160	4.6	1780	7.54	7780	4.2	1220	3.25	405	3.15	355	2.8	200	2.6	130	2.5	100	3.0	285
8,	4.1	1110	4.0	1000	8.3	9660	4.5	1630	7.55	7800	4.1	1110	3.25	405	3.1	330	2.65	145	2.6	130	2.6	130	2.5	100
9,	4.1	1110	4.0	1000	8.4	9920	5.9	4050	6.35	5010	4.05	1055	3.25	405	3.1	330	2.9	240	2.5	100	2.7	160	2.5	100
10,	4.3	1350	4.0	1000	6.8	6040	5.1	2560	5.9	4050	4.05	1055	3.15	355	3.2	380	2.6	130	2.5	100	2.8	200	2.6	130
11,	4.1	1110	4.0	1000	6.5	5350	5.2	2720	5.35	985	4.0	1000	3.05	310	3.1	330	2.95	260	2.6	130	2.5	100	2.5	100
12,	4.1	1110	3.5	540	7.9	8650	4.9	2240	5.05	2480	3.9	900	3.2	380	3.15	355	2.6	130	2.9	240	2.5	100	2.5	100
13,	8.0	8900	3.6	610	8.3	9660	4.7	1930	4.8	2080	3.8	800	3.2	380	3.15	355	2.5	100	2.9	240	2.5	100	2.5	100
14,	6.3	4900	3.7	700	9.2	12180	4.5	1630	4.6	1780	3.7	700	3.85	850	3.15	355	2.65	145	2.7	160	2.5	100	2.5	100
15,	5.4	3080	4.4	1490	8.4	9920	4.5	1630	4.8	2080	4.1	1110	3.4	480	3.2	380	3.0	285	2.6	130	2.5	100	2.5	100
16,	5.1	2560	8.7	10760	9.2	12180	4.9	2240	5.7	3650	4.0	1000	3.25	405	3.1	330	2.75	180	2.6	130	3.1	330	2.5	100
17,	4.8	2080	5.9	4050	7.5	7680	4.4	1490	5.7	3650	3.8	800	3.35	455	3.05	310	2.9	240	3.0	285	2.5	100	2.5	100
18,	4.6	1780	5.2	2720	6.7	5810	4.3	1350	5.4	3080	3.6	610	3.3	430	3.25	405	2.85	220	2.6	130	2.5	100	2.7	160
19,	4.4	1490	4.8	2080	13.6	34600	5.4	3080	5.4	3080	3.5	540	2.95	260	3.15	355	2.65	145	2.8	200	3.6	610	4.3	1350
20,	4.3	1350	4.6	1780	9.7	13740	4.9	2240	8.7	10760	3.6	610	3.0	285	2.8	200	2.55	115	2.7	160	2.5	100	3.2	380
21,	4.2	1220	4.3	1350	7.3	7200	4.7	1930	6.9	6270	3.7	700	3.1	330	3.05	310	2.75	180	2.5	100	2.4	75	3.5	540
22,	4.3	1350	4.4	1490	6.5	5350	4.5	1630	9.75	13905	3.5	540	3.2	380	3.2	380	2.75	180	2.6	130	2.5	100	2.5	100
23,	4.7	1930	4.1	1110	6.1	4460	4.4	1490	7.7	8160	3.45	510	3.3	430	2.8	200	2.55	115	2.6	130	2.7	160	2.5	100
24,	4.4	1490	4.1	1110	6.1	4460	4.3	1350	6.35	5010	3.45	510	3.4	480	3.15	355	2.75	180	2.5	100	2.5	100	2.6	130
25,	4.2	1220	4.3	1370	6.0	4250	4.2	1220	5.7	3650	3.65	655	3.3	430	3.15	355	2.7	160	2.6	130	2.9	240	2.5	100
26,	4.2	1220	6.8	6040	5.7	3650	4.4	1490	5.5	3270	3.45	510	3.2	380	2.65	145	2.55	115	2.5	100	2.5	100	2.5	100
27,	4.5	1630	4.6	1780	5.5	3270	4.2	1220	6.05	4355	3.4	480	3.45	510	2.95	260	2.85	220	2.5	100	2.8	200	2.5	100
28,	4.3	1350	3.9	900	5.5	3270	4.1	1110	5.1	2560	3.15	355	3.25	405	3.15	355	3.3	430	2.5	100	2.9	240	2.5	100
29,	4.2	1220	3.7	700	5.6	3460	4.0	1000	5.0	2400	3.4	480	3.25	405	2.85	220	3.1	330	2.5	100	2.9	240	2.6	130
30,	4.0	1000	------	------	5.6	3460	3.9	900	6.65	5695	3.25	405	2.95	260	2.75	180	3.3	430	2.7	160	2.9	240	2.5	100
31,	3.9	900	------	------	5.2	2720	------	------	6.2	4680	------	------	3.15	355	2.85	220	------	------	2.5	100	------	------	2.6	130

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, PA.

1909.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.6	130	3.6	610	4.9	2240	3.9	900	6.8	6040	3.4	480	3.5	540	2.5	100	2.5	100	2.7	160	2.7	160	2.5	100
2,	2.6	130	2.7	160	4.7	1930	3.8	800	6.3	4900	3.4	480	3.4	480	2.7	160	2.5	100	2.6	130	2.5	100	2.6	130
3,	2.5	100	3.4	480	5.0	2400	3.8	800	5.7	3650	3.4	480	3.4	480	2.5	100	2.5	100	2.5	100	3.1	330	2.5	100
4,	2.5	100	3.4	480	5.3	2890	3.7	700	5.6	3460	3.4	480	2.6	130	2.6	130	2.5	100	2.7	160	2.5	100	2.5	100
5	2.9	240	3.4	480	4.8	2080	3.9	900	5.2	2720	3.7	700	3.2	380	2.5	100	2.5	100	2.6	130	2.5	100	2.5	100
6,	3.7	700	3.4	480	4.6	1780	3.7	700	5.0	2400	4.3	1350	3.2	380	2.6	130	3.0	285	2.6	130	2.5	100	2.6	130
7,	3.6	610	3.4	480	4.5	1630	4.5	1630	4.7	1930	4.1	1110	3.2	380	2.5	100	2.6	130	2.6	130	2.5	100	2.5	100
8,	2.7	160	3.5	540	4.6	1780	4.3	1350	4.5	1630	3.9	900	2.6	130	2.6	130	2.5	100	2.5	100	2.6	130	2.5	100
9,	2.6	130	3.5	540	4.5	1630	4.1	1110	4.4	1490	4.5	1630	2.5	100	2.5	100	2.6	130	2.5	100	2.6	130	2.7	160
10,	3.3	430	3.5	540	4.9	2240	4.1	1110	4.7	1930	5.2	2720	2.6	130	2.5	100	2.6	130	2.5	100	2.5	100	2.6	130
11,	2.8	200	3.9	900	4.9	2240	4.0	1000	4.7	1930	5.5	3270	3.1	330	2.6	130	2.5	100	2.8	200	2.5	100	2.5	100
12,	2.6	130	3.7	700	4.6	1780	3.9	900	4.3	1350	5.1	2560	2.5	100	2.5	100	2.5	100	2.6	130	2.5	100	2.5	100
13,	2.6	130	3.7	700	4.5	1630	3.8	800	4.2	1220	4.7	1930	3.1	330	2.5	100	2.5	100	2.6	130	2.8	200	3.0	285
14,	3.0	285	4.2	1220	4.4	1490	7.7	8160	4.1	1110	5.0	2400	2.6	130	2.6	130	3.0	285	3.1	330	2.5	100	4.8	2080
15,	2.6	130	5.2	2720	4.4	1490	6.6	5580	4.1	1110	4.5	1630	3.2	380	2.6	130	2.5	100	2.5	100	2.5	100	3.7	700
16,	2.5	100	5.6	3460	4.2	1220	5.6	3460	4.0	1000	4.2	1220	3.2	380	2.5	100	2.7	160	2.6	130	2.5	100	2.6	130
17,	2.6	130	6.0	4250	4.1	1110	5.1	2560	3.9	900	4.0	1000	2.6	130	3.5	540	2.9	240	2.6	130	2.5	100	2.8	200
18,	3.2	380	5.2	2720	4.0	1000	4.8	2080	3.8	800	4.5	1630	2.6	130	3.3	430	2.8	200	2.6	130	2.5	100	2.8	200
19,	2.7	160	4.8	2080	3.9	900	4.6	1780	3.7	700	4,0	1000	3.2	380	2.6	130	2.5	100	2.5	100	2.5	100	2.7	160
20,	2.7	160	5.0	2400	3.9	900	4.5	1630	3.6	610	3.7	700	2.5	100	2.6	130	3.0	285	3.1	330	2.5	100	3.6	610
21,	2.7	160	4.6	1780	3.9	900	5.3	2890	3.6	610	3.8	800	2.5	100	2.6	130	2.6	130	3.0	285	2.6	130	3.0	285
22,	2.5	100	4.5	1630	3.9	900	6.1	4460	4.0	1000	3.6	610	2.5	100	2.6	130	3.0	285	2.6	130	2.5	100	2.7	160
23,	2.6	130	4.3	1350	3.7	700	5.7	3650	3.7	700	3.5	540	3.0	285	3.1	330	2.6	130	3.0	285	2.5	100	2.6	130
24,	3.2	380	9.0	11600	3.6	610	5.6	3460	3.7	700	3.4	480	2.6	130	2.6	130	2.6	130	3.2	380	2.5	100	2.7	160
25	6.4	5120	7.9	8650	3.6	610	5.6	3460	3.5	540	3.5	540	2.6	130	2.6	130	2.6	130	3.5	540	2.5	100	2.5	100
26,	4.9	2240	6.1	4460	4.7	1930	5.0	2400	3.4	480	3.5	540	3.2	380	2.6	130	2.6	130	2.7	160	2.6	130	2.6	130
27,	4.4	1490	5.6	3460	4.2	1220	4.8	2080	3.4	480	4.6	1780	2.6	130	2.5	100	3.0	285	3.0	285	2.5	100	2.7	160
28,	4.1	1110	5.2	2720	4.1	1110	4.8	2080	3.7	700	4.2	1220	2.6	130	2.8	200	2.5	100	2.5	100	2.5	100	2.7	160
29,	3.8	800	------	------	4.1	1110	4.6	1780	3.7	700	4.4	1490	2.6	130	2.6	130	2.5	100	2.5	100	2.5	100	2.8	200
30,	3.8	800	------	------	4.1	1110	7.2	6960	3.4	480	3.6	610	2.6	130	2.5	100	2.5	100	2.5	100	2.5	100	3.4	480
31,	3.2	380	------	------	4.0	1000	------	------	3.5	540	------	------	2.8	200	2.5	100	------	------	2.5	100	------	------	3.3	430

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, PA.

1910. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.2	380	3.2	380	9.1	11890	3.6	610	4.6	1780	3.2	380	3.1	330	2.6	130	3.0	285	3.1	330	2.6	130	2.6	130
2,	3.1	330	3.2	380	9.1	11890	3.6	610	4.5	1630	3.1	330	3.6	610	2.6	130	3.4	480	3.0	285	2.6	130	2.5	100
3,	3.7	700	3.1	330	9.1	11890	3.2	380	4.3	1350	3.3	430	3.5	540	2.6	130	2.7	160	3.1	330	2.6	130	2.5	100
4,	3.8	800	4.1	1110	7.6	7920	3.5	540	4.4	1490	3.3	430	3.5	540	2.7	160	3.9	900	3.1	330	2.6	130	2.5	100
5,	3.0	285	3.2	380	7.1	6730	3.8	800	4.1	1110	3.2	380	3.6	610	2.7	160	4.7	1930	2.6	130	2.5	100	2.6	130
6,	3.0	285	2.7	160	6.8	6040	3.5	540	4.0	1000	4.1	1110	3.1	330	2.7	160	3.7	700	2.6	130	2.6	130	2.7	160
7,	6.0	4250	3.5	540	7.5	7680	3.5	540	3.6	610	4.0	1000	3.1	330	2.6	130	2.7	160	2.6	130	2.6	130	2.9	240
8,	4.8	2080	2.9	240	6.4	5120	3.0	285	3.4	480	3.6	610	3.2	380	2.8	200	3.4	480	2.6	130	2.6	130	2.5	100
9,	3.8	800	3.2	380	5.8	3850	3.4	480	4.3	1350	3.1	330	3.1	330	3.0	285	3.2	380	2.6	130	2.5	100	2.6	130
10,	3.8	800	3.3	430	5.3	2890	2.6	130	4.0	1000	3.7	700	2.8	200	3.1	330	2.6	130	2.6	130	2.6	130	2.7	160
11,	3.0	285	3.5	540	5.0	2400	3.4	480	3.6	610	5.0	2400	3.1	330	3.3	430	2.7	160	2.5	100	2.5	100	2.5	100
12,	2.8	200	3.6	610	4.8	2080	3.4	480	3.5	540	5.5	3270	3.2	380	3.0	285	3.1	330	2.5	100	2.6	130	3.1	330
13,	2.7	160	2.7	160	4.6	1780	3.1	330	3.6	610	5.1	2560	3.1	330	3.1	330	3.4	480	2.5	100	2.5	100	2.8	200
14,	2.7	160	3.5	540	4.8	2080	2.9	240	3.4	480	4.8	2080	3.1	330	2.6	130	3.8	800	2.5	100	3.0	285	2.9	240
15,	2.6	130	3.2	380	4.5	1630	3.1	330	3.4	480	4.4	1490	3.2	380	3.1	330	3.4	480	2.6	130	3.1	330	2.6	130
16,	2.8	200	3.2	380	4.4	1490	3.2	380	3.6	610	4.2	1220	3.1	330	2.8	200	3.2	380	2.6	130	2.6	130	2.8	200
17,	3.5	540	6.3	4900	4.3	1350	3.4	480	3.5	540	4.7	1930	2.7	160	2.8	200	2.6	130	2.6	130	2.5	100	3.1	330
18,	2.8	200	4.8	2080	4.2	1220	4.6	1780	3.1	330	4.7	1930	3.1	330	2.6	130	2.6	130	2.6	130	2.5	100	3.0	285
19,	2.6	130	4.6	1780	4.0	1000	4.6	1780	3.4	480	4.2	1220	3.2	380	3.7	700	3.1	330	2.6	130	2.6	130	2.8	200
20,	4.5	1630	3.9	900	4.0	1000	5.0	2400	3.4	480	4.1	1110	3.1	330	3.1	330	3.0	285	2.6	130	2.6	130	2.7	160
21,	4.2	1220	4.1	1110	4.4	1490	5.0	2400	3.5	540	3.6	610	3.1	330	2.7	160	3.0	285	2.6	130	3.0	285	3.3	430
22,	9.7	13740	4.9	2240	4.3	1350	4.8	2080	3.3	430	3.6	610	3.1	330	3.3	430	3.1	330	3.0	285	3.0	285	2.9	240
23,	5.3	2890	6.1	4460	4.2	1220	4.5	1630	3.6	610	3.5	540	3.2	380	2.6	130	3.1	330	2.7	160	2.5	100	3.1	330
24,	4.8	2080	4.7	1930	4.1	1110	4.6	1780	3.6	610	3.6	610	3.1	330	2.6	130	3.1	330	3.1	330	2.9	240	3.0	285
25,	4.4	1490	4.8	2080	4.1	1110	6.5	5350	4.3	1350	3.6	610	3.2	380	2.6	130	2.6	130	2.7	160	2.5	100	2.8	200
26,	4.2	1220	4.5	1630	4.0	1000	6.6	5580	4.3	1350	3.2	380	3.1	330	2.6	130	3.8	800	2.6	130	2.5	100	2.9	240
27,	3.8	800	4.5	1630	3.5	540	5.9	4050	4.0	1000	3.6	610	2.8	200	2.6	130	2.6	130	2.6	130	2.5	100	2.9	240
28,	3.7	700	7.7	8160	4.0	1000	5.3	2890	3.6	610	3.6	610	2.6	130	2.6	130	3.7	700	3.6	610	2.9	240	2.7	160
29	3.7	700	------	------	3.7	700	5.0	2400	3.3	430	3.6	610	3.2	380	2.6	130	3.8	800	2.6	130	2.6	130	2.6	130
30,	3.2	380	------	------	3.6	610	5.0	2400	3.7	700	3.5	540	2.6	130	2.6	130	3.1	330	2.6	130	2.5	100	3.1	330
31,	3.7	700	------	------	3.8	800	------	......	3.5	540	------	------	3.0	285	2.7	160	------	------	3.2	380	------	......	4.4	1490

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY, PA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.5	540	4.7	1930	4.4	1490	4.6	1780	4.4	1490	2.5	100	2.5	100	2.6	130	4.7	1930	4.1	1110	3.9	900	4.3	1350
2,	3.9	900	4.6	1780	4.4	1490	4.3	1350	4.6	1780	2.5	100	2.9	240	2.5	100	4.0	1000	8.7	10760	3.9	900	4.3	1350
3,	4.1	1110	4.5	1630	4.4	1490	4.4	1490	4.1	1110	2.8	200	2.5	100	2.6	130	3.7	700	5.8	3850	3.9	900	4.0	1000
4,	4.8	2080	4.3	1350	4.2	1220	4.3	1350	3.9	900	3.2	380	2.5	100	3.7	700	2.8	200	5.3	2890	3.8	800	4.1	1110
5,	4.7	1920	3.7	700	3.6	610	5 5	3270	3.8	800	3.0	285	3.0	285	2.6	130	3.0	285	4.9	2240	3.8	800	3.5	540
6,	4.5	1630	4.3	1350	4.3	1350	5.8	3850	3.8	800	4.0	1000	3.1	330	3.4	480	3.2	380	4.6	1780	3.7	700	2.7	160
7,	3.7	700	3.4	480	4.2	1220	5.6	3460	3.4	480	3.6	610	2.5	100	2.6	130	3.9	900	6.1	4460	4.9	2240	2.6	130
8,	3.8	800	4.3	1350	4.0	1000	5.3	2890	3.9	900	3.1	330	2.6	130	2.6	130	3.4	480	5.3	2890	4 4	1490	3.5	540
9,	3.9	900	3.9	900	3.7	700	5.2	2720	3.6	610	3.1	330	2.6	130	2.6	130	6.6	5580	5.0	2400	4.3	1350	2.6	130
10,	3.7	700	2.9	240	4.0	1000	5.3	2890	3.8	800	3.1	330	2.6	130	2.7	160	6.0	4250	4.7	1930	4.2	1220	4.0	1000
11,	3.2	380	3.2	380	4.8	2080	5.0	2400	3.7	700	3.1	330	2.6	130	3.2	380	4.8	2080	4.5	1630	3.9	900	4.3	1350
12,	3.8	800	3.6	610	4.2	1220	4.9	2240	3.5	540	3.7	700	2.5	100	2.7	160	4.3	1350	4.3	1350	3.5	540	4.3	1350
13,	5.8	3850	3.8	800	4.6	1780	4.7	1930	3.5	540	3.6	610	3.1	330	2.6	130	4.0	1000	4.2	1220	4.4	1490	3.7	700
14,	7.0	6500	4.4	1490	4.6	1780	4.7	1930	3.4	480	3.2	380	2.6	130	2.7	160	3.9	900	4.0	1000	4.2	1220	4.4	1490
15,	8.3	9600	5.8	3850	4.5	1630	5.4	3080	3.5	540	3.0	285	3.1	330	2.5	100	4.4	1490	3.6	610	4.0	1000	4.4	1490
16,	6.3	4900	5.0	2400	4.7	1930	4.9	2240	3.5	540	3.0	285	2.5	100	2.7	160	7.8	8400	4.2	1220	4.1	1110	5.2	2720
17,	5.3	2890	4.7	1930	4.3	1350	4.9	2240	3.6	610	2.5	100	3.1	330	2.6	130	5.4	3080	4.0	1000	4.2	1220	5.5	3270
18,	4.9	2240	5.4	3080	4.5	1630	4.6	1780	3.2	380	2.8	200	2.6	130	2.6	130	4.9	2240	4.8	2080	4.1	1110	5.2	2720
19,	4.8	2080	5.5	3270	3.9	900	4.6	1780	3.1	330	2.6	130	2.5	100	2.6	130	4.7	1930	4.5	1630	4.7	1930	4.9	2240
20,	4.6	1780	5.4	3080	4.4	1490	5.6	3460	3.2	380	2.5	100	2.6	130	2.6	130	4.2	1220	4.3	1350	4.7	1930	4.7	1930
21,	4.1	1110	5.0	2400	4.5	1630	5.7	3650	2.8	200	3.1	330	2.5	100	2.6	130	3.9	900	4.2	1220	4.5	1630	4.4.	1490
22,	3.8	800	4.7	1930	4.3	1350	5.6	3460	3.0	285	3.0	285	3.2	380	2,6	130	3.8	800	4.0	1000	4.4	1490	4.4	1490
23,	4.5	1630	4.7	1930	4.1	1110	6.4	5120	3.0	285	3.1	330	2.6	130	2.6	130	3.1	330	5.4	2400	4.2	1220	4.5	1630
24,	4.1	1110	4.5	1630	4.2	1220	5.7	3650	3.4	480	3.0	285	2.6	130	2.7	160	3.1	330	4.5	1630	4.1	1110	4.3	1350
25,	4.0	1000	4.4	1490	4.2	1220	5.4	3080	3.2	380	3.6	610	2.7	160	2.7	160	3.9	900	4.3	1350	4.1	1110	4.4	1490
26,	3.9	900	4.3	1350	3.4	480	5.1	2560	3.2	380	3.6	610	2.6	130	3.4	480	3.1	330	4.3	1350	3.8	800	4.6	1780
27,	3.8	800	4.7	1930	4.6	1780	4.9	2240	2.9	240	3.7	700	2.6	130	2.6	130	3.7	700	4.2	1220	4.2	1220	5.2	2720
28,	4.9	2240	4.7	1930	5.0	2400	4.7	1930	3.4	480	3.3	430	2.6	130	2.7	160	3.7	700	4.0	1000	4.0	1000	5.1	2560
29,	4.3	1350	------	------	4.7	1930	4.5	1630	2.6	130	3.2	380	2.6	130	3.0	285	3.9	900	3.6	610	4.2	1220	4.5	1630
30,	5.1	2560	------	------	4.8	2080	4.4	1490	3.5	540	3.1	330	3.0	285	4.8	2080	5.2	2720	4.1	1110	4.0	1000	4.8	2080
31,	5.0	2400	------	------	4.8	2080	------	------	3.5	540	------	------	3.3	430	4.1	1110	------	------	4.0	1000	------	------	4.5	1630

ESTIMATED MONTHLY DISCHARGE OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY.

(Drainage area, 845 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1895.					
May,	1000	380	613	0.725	0.836
June,	2720	285	470	0.556	0.621
July,	430	285	311	0.368	0.425
August,	330	285	317	0.375	0.433
September,	330	160	242	0.286	0.319
October.	200	160	190	0.225	0.260
November,	285	240	244	0.289	0.323
December,	900	130	339	0.401	0.462
1896.					
January,	1780	200	417	0.493	0.569
February,	4250	330	1112	1.316	1.420
March,	8160	285	1359	1.608	1.854
April,	4900	800	1570	1.858	2.073
May,	800	380	591	0.699	0.806
June,	6270	380	1600	1.893	2.112
July,	2400	430	995	1.178	1.358
August,	1220	285	504	0.596	0.687
September,	20970	240	944	1.117	1.246
October,	3270	430	761	0.901	1.039
November,	4050	540	1083	1.282	1.430
December,	2080	480	751	0.889	1.025
The year,	20970	200	974	1.152	15.619
1897.					
January,	2240	480	704	0.833	0.960
February,	10760	380	1952	2.310	2.405
March,	6270	1000	2944	3.484	4.017
April,	5810	800	1724	2.040	2.276
May,	6960	540	1648	1.950	2.248
June,	540	285	352	0.416	0.464
July,	1000	200	383	0.453	0.522
August,	1000	200	324	0.383	0.442
September,	800	200	236	0.279	0.311
October,	285	200	204	0.241	0.278
November,	1220	200	615	0.728	0.812
December,	4250	540	1128	1.335	1.539
The year,	10760	200	1018	1.204	16.274
1898.					
January,	6500	610	2010	2.378	2.742
February,	2720	1000	1711	2.025	2.108
March,	15450	900	2863	3.388	3.906
April,	3270	900	1307	1.547	1.726
May,	8900	900	2075	2.456	2.832
June,	1110	240	511	0.605	0.675
July,	430	200	228	0.270	0.311
August,	5350	285	696	0.824	0.950
September,	430	200	235	0.278	0.310
October,	13740	160	1365	1.615	1.862
November,	3270	540	912	1.079	1.204
December,	4050	380	1147	1.357	1.564
The year,	15450	160	1255	1.485	20.190

ESTIMATED MONTHLY DISCHARGE OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY.

(Drainage area, 845 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
†1899.					
July,	900	285	351	0.415	0.478
August,	1220	200	311	0.368	0.425
September,	2400	285	379	0.448	0.500
October,	285	200	225	0.266	0.307
November,	2080	285	428	0.506	0.565
December,	2080	285	764	0.904	1.042
1900.					
January,	8900	285	1143	1.352	1.560
February,	4900	1220	1938	2.293	2.388
March,	4250	800	1508	1.785	2.058
April,	2080	800	925	1.095	1.222
May,	610	285	365	0.432	0.498
June,	900	240	319	0.378	0.422
July,	240	240	240	0.284	0.327
August,	240	240	240	0.284	0.327
September,	240	240	240	0.284	0.317
October,	240	240	240	0.284	0.327
November,	10200	240	847	1.002	1.118
December,	5580	285	712	0.843	0.972
The year,	10200	240	726	0.860	11.536
*1901.					
January,	1350	285	639	0.759	0.875
February,	------------	------------	610	0.722	0.752
March,	14070	1000	2740	3.243	3.739
April,	10200	1000	3219	4.164	4.645
May,	8160	800	1878	2.222	2.561
June,	2890	800	1273	1.507	1.682
July,	2400	285	614	0.727	0.838
August,	5810	285	848	1.004	1.157
September,	3650	285	852	1.008	1.125
October,	285	285	285	0.337	0.388
November,	285	285	285	0.337	0.376
December,	37800	285	3253	3.850	4.439
The year,	------------	285	1400	1.657	22.577
‡1902.					
January,	4900	1000	1369	1.620	1.868
February,	13740	------------	1923	2.276	2.372
March,	30000	1780	4660	5.515	6.358
April,	23530	800	3177	3.760	4.195
May,	1000	380	558	0.660	0.761
June,	2080	285	484	0.573	0.639
July,	3270	430	1027	1.215	1.401
August,	1350	285	402	0.476	0.549
September,	380	240	280	0.331	0.369
October,	1930	285	492	0.582	0.671
November,	430	285	307	0.363	0.405
December,	8650	285	1996	2.362	2.723
The year,	30000	240	1389	1.644	22.311

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†Jan. 8-14, Jan. 28 to Feb. 20, frozen. No estimates made. March 10-June 2, no readings taken.

*Frozen Jan. 4-8, 20-31, Feb. 1-March 6-8, and Dec. 22-28. Estimated from Newport data.

‡Feb. 1-25, frozen. Estimated from Newport data.

ESTIMATED MONTHLY DISCHARGE OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY.

(Drainage area, 845 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
§1903.					
January,	4900	900	1645	1.947	2.245
February,	18620	1350	3946	4.670	4.863
March,	10760	1000	3163	3.743	4.315
April,	7920	900	2277	2.695	3.006
May,	800	430	563	0.666	0.768
June,	4250	380	1242	1.470	1.640
July,	9400	430	1548	1.832	2.112
August,	11320	285	1111	1.315	1.516
September,	2080	285	790	0.935	1.044
October,	2400	285	753	0.891	1.027
November,	1350	330	506	0.598	0.667
December,	800	380	531	0.628	0.724
The year,	18620	285	1506	1.782	23.927
*1904.					
January,	7200	------------	1386	1.640	1.891
February,	11600	700	2068	2.447	2.639
March,	9400	1110	3345	3.959	4.564
April,	10200	900	2502	2.961	3.303
May,	6730	700	1409	1.667	1.922
June,	2400	480	896	1.060	1.183
July,	8160	480	1516	1.794	2.070
August,	1110	330	458	0.542	0.625
September,	330	285	296	0.350	0.390
October,	380	240	268	0.317	0.365
November,	285	240	242	0.286	0.319
December,	------------	240	314	0.372	0.429
The year,	11600	240	1225	1.450	19.700
†1905.					
January,	1350	380	643	0.761	0.877
February,	1110	480	802	0.949	0.988
March,	13740	480	3314	3.922	4.521
April,	2240	700	1122	1.328	1.482
May,	1630	430	719	0.851	0.981
June,	6730	610	1489	1.762	1.966
July,	1350	380	575	0.680	0.784
August,	4250	330	955	1.130	1.303
September,	1930	330	506	0.599	0.668
October,	1930	330	598	0.708	0.817
November,	3650	330	612	0.724	0.807
December,	6960	540	1669	1.975	2.277
The year,	13740	330	1084	1.282	17.471

§Jan. 2, 9-28, Feb. 19-23, Nov. 27-Dec. 5, and Dec. 15-31, frozen. Estimated from Newport data.
*Frozen January 1-22, 27-31, Feb. 1-6, 13-23, Dec. 10-31. Estimated from Newport data.
†Jan. 1, 5-10, frozen. Estimated from Newport data.

ESTIMATED MONTHLY DISCHARGE OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY.

(Drainage area, 845 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1906.					
January,	5810	1000	1936	2.291	2.641
February,	1220	430	710	0.840	0.875
March,	8650	480	1494	1.768	2.039
April,	7920	700	2748	3.252	3.628
May,	1490	380	586	0.693	0.799
June,	1110	330	464	0.549	0.613
July,	1110	285	425	0.503	0.580
August,	6270	330	1112	1.316	1.517
September,	480	285	332	0.393	0.438
October,	1630	240	382	0.452	0.521
November,	380	285	301	0.356	0.397
December,	3270	285	814	0.963	1.110
The year,	8650	240	942	1.115	15.158
1907.					
January,	6960	1110	2858	3.382	3.899
February,	1110	480	716	0.847	0.882
March,	29290	430	4950	5.858	6.754
April,	2890	900	1318	1.560	1.740
May,	3460	540	1209	1.431	1.650
June,	3850	540	1738	2.057	2.295
July,	2080	330	669	0.792	0.913
August,	1930	330	428	0.506	0.583
September,	3460	330	757	0.896	1.000
October,	1110	330	447	0.529	0.610
November,	3650	430	1200	1.420	1.584
December,	5810	540	1826	2.161	2.491
The year,	29290	330	1510	1.787	24.401
1908.					
January,	8900	900	1881	2.226	2.566
February,	10760	540	1756	2.078	2.241
March,	34600	800	6745	7.982	9.202
April,	4050	900	1928	2.282	2.546
May,	13905	1000	4098	4.850	5.592
June,	2080	355	992	1.174	1.310
July	850	260	425	0.503	0.580
August,	405	145	314	0.372	0.429
September,	[illegible]	100	209	0.247	0.276
October,	285	100	139	0.165	0.190
November,	[illegible]	75	160	0.189	0.211
December,	[illegible]		181	0.214	0.247
The year,	34600	75	1569	1.857	25.392
1909.					
January,	5120	100	556	0.658	0.759
February,	11600	160	2200	2.604	2.711
March,	2800	610	1470	1.740	2.006
April,	8160	700	2372	2.807	3.132
May,	6040	480	1542	1.825	2.104
June,	3270	480	1209	1.430	1.595
July,	540	100	238	0.282	0.325
August,	540	100	151	0.159	0.183
September,	295	100	149	0.176	0.197
October,	340	100	175	0.207	0.239
November,	330	100	117	0.138	0.154
December,	2080	100	263	0.311	0.358
The year,	11600	100	870	1.028	13.763

ESTIMATED MONTHLY DISCHARGE OF FRANKSTOWN BRANCH JUNIATA RIVER, AT HUNTINGDON, HUNTINGDON COUNTY.

(Drainage area, 845 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1910.					
January,	13740	130	1299	1.537	1.772
February,	8160	160	1423	1.684	1.753
March,	11890	540	3318	3.927	4.527
April,	5580	130	1472	1.742	1.943
May,	1780	330	811	.960	1.107
June,	3270	330	1021	1.208	1.348
July,	610	130	345	.408	.471
August,	700	130	215	.254	.293
September,	1930	130	442	.523	.583
October,	610	100	187	.221	.255
November,	330	100	148	.176	.196
December,	1490	100	245	.290	.334
The year,	13740	100	911	12.930	14.582
1911.					
January,	9660	380	2009	2.378	2.742
February,	3850	240	1685	1.994	2.076
March,	2400	480	1440	1.704	1.964
April,	5120	1350	2565	3.036	3.388
May,	1780	130	602	.712	.821
June,	1000	100	369	.437	.488
July,	430	100	180	.213	.246
August,	2080	100	283	.335	.386
September,	8400	200	1600	1.893	2.112
October,	10760	610	1977	2.340	2.698
November,	2240	540	1185	1.402	1.564
December,	3270	130	1497	1.772	2.043
The year,	10760	100	1283	1.518	20.528

KISHACOQUILLAS CREEK.

DESCRIPTION OF BASIN.

Kishacoquillas creek joins the Juniata river at Lewistown, 45 miles above the river's mouth, from the northeast, draining 195 square miles, practically all of which lies in Mifflin county. It is formed by the East and West Branches, which join at Reedsville, both branches and its other tributaries rising in the sandstone ridges, while the main stream valley and those of the two branches for some miles above their junction lie in the limestone resulting in a well maintained flow. Its course is southwesterly and its length from Reedsville 5½ miles, its basin being fanshaped. The main valley is densely populated and water is used for industrial, domestic and water power purposes. Its larger upper tributaries as they emerge from the sandstone area are used for supplying Reedsville, Burnham, Yeagertown and Lewistown.

The mean annual precipitation over this watershed is from 40 to 45 inches.

The discharge has been measured since August 21, 1911, at Kulp's 2 miles above the mouth.

SUSQUEHANNA BASIN—STATION NO. 19.

KISHACOQUILLAS CREEK AT KULP'S, PA.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania on August 21st, 1911, on a two span, wooden, highway bridge at Kulp's.

The channel is straight above and below the station for 300 feet, with riffles about 100 feet below the bridge. The right bank is high but overflows during extreme stages, while the left bank is high and does not overflow. The bed is of rocks and mud and is fairly permanent. There is slight velocity under the bridge at low stages.

Discharge measurements are taken from the downstream side of the bridge and by wading, at low stages, 150 feet above the bridge. The initial point for soundings is top edge of left abutment, downstream side.

A staff gage is bolted to the upstream face of the left abutment. The elevation of zero is arbitrary datum. Bench mark No. 1 is mark chiselled on stone in fourth row from top, upstream face, left abutment; elevation, 5.87 feet above gage datum. The gage is read twice daily by Thomas W. Hawke.

Since the establishment of this station six discharge measurements have been made.

DISCHARGE MEASUREMENTS OF KISHACOQUILLAS, AT KULP'S MIFFLIN COUNTY, PENNA.

(Drainage area, 190 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1911.							
1	Aug. 21,	Langenheim & Reckord.	79	106	0.50	0.83	53	Wading msmt. 150 feet above bridge.
2	Aug. 30,	Langenheim, ----------	61	187	1.17	1.35	218	
3	Nov. 18,	Gannett & Langenheim.	60	222	1.94	1.93	430	
4	Dec. 8,	Boehringer, ----------	62	179	0.77	1.22	138	Surface msmt.
	1912.							
5	Mar. 20,	Boehringer, ----------	62	267	3.50	2.55	935	Surface msmt.
6	April 24,	Reckord & Boehringer,	60	228	1.97	1.90	449	0.6 msmt.

DISCHARGE TABLE FOR KISHACOQUILLAS CREEK, AT KULP'S, MIFFLIN COUNTY, FROM AUGUST 21, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	.-ft.
0.60	14	.20	144	.80	378	.40	795	.90	1297
.70	29	.30	176	.90	432	.50	886	3.00	1410
.80	47	.40	211	2.00	493	.60	982	.10	1530
.90	68	.50	249	.10	562	.70	1084	.20	1660
1.00	91	.60	288	.20	635	.80	1189		
.10	116	.70	330	.30	712				

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF KISHACOQUILLAS CREEK, AT KULP'S, MIFFLIN COUNTY, PENNA.

1911. Day.	AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	1.35	194	1.25	160	1.61	292	1.35	194
2,	------	------	1.17	136	3.55	2170	1.45	230	1.33	186
3,	------	------	.81	49	2.43	822	1.38	204	1.29	173
4,	------	------	1.15	130	2.27	689	1.35	194	1.41	215
5,	------	------	1.15	130	1.95	462	1.32	183	1.35	194
6,	------	------	1.45	230	1.79	373	1.39	208	1.32	183
7,	------	------	1.24	157	2.57	953	1.64	305	1.33	186
8,	------	------	1.17	136	2.01	500	1.47	238	1.32	183
9,	------	------	2.25	674	1.91	438	1.40	211	1.31	180
10,	------	------	1.93	450	1.83	394	1.37	200	1.29	173
11,	------	------	1.71	335	1.80	378	1.36	197	1.25	160
12,	------	------	1.60	288	1.72	340	1.42	219	1.23	154
13	------	------	1.45	230	1.63	301	1.51	253	1.19	141
14,	------	------	1.33	186	1.56	272	1.37	200	1.21	147
15,	------	------	2.19	628	1.50	249	1.40	211	1.40	211
16,	------	------	2.19	628	1.46	234	1.39	208	1.91	438
17,	------	------	1.83	394	1.43	222	1.36	197	1.92	444
18,	------	------	1.69	326	1.81	383	1.85	405	1.86	410
19,	------	------	1.60	288	1.62	296	1.69	326	1.79	373
20,	------	------	1.57	276	1.55	268	1.69	326	1.72	340
21,	.62	17	1.43	222	1.51	253	1.68	322	1.67	317
22,	.72	33	1.35	194	1.46	234	1.63	301	1.69	326
23,	.81	49	1.27	166	2.02	507	1.57	276	1.87	416
24,	.67	24	1.19	141	1.83	394	1.55	268	1.67	317
25,	.93	75	1.20	144	1.80	378	1.53	261	1.71	335
26,	.87	62	1.19	141	1.77	364	1.49	245	1.67	317
27,	.67	24	1.15	130	1.72	340	1.42	219	2.15	598
28,	.61	16	1.13	124	1.67	317	1.41	215	1.87	416
29	1.14	127	1.35	194	1.61	292	1.39	208	1.85	405
30,	1.15	130	1.32	183	1.55	268	1.37	200	1.79	373
31,	1.57	276	------	------	1.53	261	------	------	1.83	394

ESTIMATED MONTHLY DISCHARGE OF KISHACOQUILLAS CREEK, AT KULP'S, MIFFLIN COUNTY.

(Drainage area, 190 square miles.)

1911. Month.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
September,	674	49	250	1.316	1.469
October,	2170	160	436	2.295	2.646
November,	405	183	244	1.284	1.432
December,	598	141	287	1.511	1.742

TUSCARORA CREEK.

DESCRIPTION OF BASIN.

Tuscarora creek, an important tributary of the Juniata river, joining that stream at Port Royal, from the south, rises in the southeastern part of Huntingdon county, and flows northeasterly through that county into Juniata county, and thence in the same direction to the river. Its total length is approximately 45 miles, and its total drainage area approximately 256 miles, its watershed being long, straight and narrow. The only large tributary is Licking creek, which after flowing nearly parallel to the parent stream for several miles, joins it just above the river. Licking creek is used for industrial water supply. The valley is well cultivated as are some of the side hills, while the hill tops are well timbered. The main stream is unused for water supply and little for power.

The mean annual precipitation over this watershed is from 40 to 45 inches.

The discharge has been measured since August 21st, 1911 at Groninger's Bridge, 4 miles above the mouth.

SUSQUEHANNA BASIN—STATION NO. 20.

TUSCARORA CREEK NEAR PORT ROYAL, PA.

DESCRIPTION OF STATION.

This station was established on August 21st, 1911, by the Water Supply Commission of Pennsylvania, on a single span, steel, through truss, highway bridge about four miles above Port Royal.

The channel above the station is straight for 150 feet, with bend to left, while below the station it is straight for 200 feet. The right and left banks are low but do not overflow except during extreme stages. The bed is of gravel and rocks and is fairly permanent. There is a good velocity at all stages.

Measurements are taken from the downstream side of the bridge and by wading 100 feet upstream during low stages. The initial point for soundings is bridge pin, downstream right abutment.

A chain gage is bolted to the floor on the upstream side of the bridge. The length of the chain from bottom of weight to marker is 21.70 feet. The elevation of zero is arbitrary datum. Bench mark No. 1 is shelf in stone on face of right abutment, seventh course from top, second in from downstream corner, 0.54 feet down from top of stone; elevation, 9.71 feet above gage datum. The gage is read twice daily by G. W. Groninger.

Since the establishment of this station 11 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF TUSCARORA CREEK, NEAR PORT ROYAL, JUNIATA COUNTY, PENNA.

(Drainage area, 205 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1911.							
1	Aug. 21,	Langenheim & Reckord.	41	47	0.54	2.34	25.3	Wading msmt. 100 feet above bridge.
2	Aug. 30,	Langenheim, ...	102	263	2.10	4.46	551	From bridge.
3	Dec. 8,	Boehringer, ...	79	127	0.85	2.96	108	" "
	1912.							
4	Mar. 15,	Boehringer, ...	143	815	5.12	8.67	4172	" " (Surface)
5	Mar. 15,	Boehringer, ...	150	902	5.50	9.34	4965	" " "
6	Mar. 16,	Reckord, ...	125	535	3.94	6.61	2108	" " "
7	Mar. 16,	Reckord, ...	124	511	3.88	6.47	1982	" " "
8	Mar. 16,	Reckord, ...	122	478	3.69	6.20	1762	" " "
9	Mar. 16,	Reckord, ...	121	466	3.69	6.10	1719	" " "
10	Mar. 19,	Langenheim & Reckord.	104	252	2.05	4.30	516	" " "
11	April 24,	Reckord & Boehringer.	98	217	1.95	3.95	424	" "

DISCHARGE TABLE FOR TUSCARORA CREEK, NEAR PORT ROYAL, JUNIATA COUNTY, FROM AUGUST 21, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.
2.10	5	.70	295	.30	1145	.90	2395	.50	3995
.20	12	.80	335	.40	1210	7.00	2485	.60	4110
.30	20	.90	375	.50	1275	.10	2575	.70	4225
.40	30	4.00	420	.60	1345	.20	2665	.80	4340
.50	40	.10	465	.70	1415	.30	2755	.90	4460
.60	52	.20	510	.80	1490	.40	2850	9.00	4580
.70	65	.30	560	.90	1565	.50	2950	.10	4700
.80	80	.40	615	6.00	1640	.60	3050	.20	4820
.90	97	.50	670	.10	1715	.70	3150	.30	4945
3.00	115	.60	725	.20	1790	.80	3250	.40	5080
.10	135	.70	780	.30	1870	.90	3350	.50	5215
.20	155	.80	835	.40	1950	8.00	3455	.60	5350
.30	180	.90	890	.50	2035	.10	3560	.70	5485
.40	205	5.00	950	.60	2125	.20	3665	.80	5625
.50	235	.10	1015	.70	2215	.30	3775	.90	5765
.60	265	.20	1080	.80	2305	.40	3885	10.00	5905

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF TUSCARORA CREEK, NEAR PORT ROYAL, JUNIATA COUNTY, PENNA.

1911. Day.	AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	5.43	1230	3.72	303	3.22	160	2.96	108
2,	------	------	3.95	398	4.50	670	3.05	125	2.99	113
3,	------	------	3.40	205	3.75	315	2.96	108	3.00	115
4,	------	------	3.15	145	3.51	238	2.87	92	3.01	117
5,	------	------	2.93	102	3.29	178	2.89	95	2.94	104
6,	------	------	2.99	113	3.13	141	2.93	102	2.84	87
7	------	------	2.91	99	3.59	262	3.80	335	2.86	90
8,	------	------	2.79	78	3.41	208	3.43	214	2.92	101
9,	------	------	4.29	555	3.16	147	3.29	178	2.95	106
10,	------	------	4.63	742	3.11	137	3.24	165	2.96	108
11,	------	------	3.69	292	3.28	175	3.16	147	2.92	101
12,	------	------	3.38	200	3.16	147	3.13	141	2.88	94
13,	------	------	3.12	139	3.00	115	3.47	226	2.93	102
14,	------	------	2.96	108	2.98	111	3.15	145	2.88	94
15,	------	------	b5.18	1067	2.96	108	3.19	153	3.80	335
16,	------	------	5.87	1542	2.90	97	3.35	192	5.12	1028
17,	------	------	4.37	598	2.90	97	3.15	145	5.29	1138
18,	------	------	3.77	323	4.54	692	4.04	438	4.44	637
19,	------	------	3.52	241	4.11	470	4.11	470	4.01	424
20,	------	------	3.35	192	3.72	303	3.79	331	3.66	283
21,	2.27	18	3.16	147	3.52	241	3.66	283	3.55	250
22	2.14	8	3.21	158	3.43	214	3.45	220	3.62	271
23,	2.15	8	3.07	129	4.04	438	3.30	180	4.39	610
24,	2.22	14	2.95	106	3.72	303	3.31	182	4.09	460
25,	2.40	30	2.93	102	3.50	235	3.45	220	4.13	478
26,	2.69	64	2.84	87	3.40	205	3.23	162	3.92	384
27,	2.72	68	2.83	85	3.30	180	3.14	143	4.94	914
28,	2.61	53	2.91	99	3.22	160	3.13	141	4.53	686
29,	3.42	211	3.48	229	3.18	151	3.12	139	3.88	367
30,	4.74	802	4.64	747	3.12	139	3.05	125	3.98	411
31,	a5.72	1430	------	------	3.16	147	------	------	3.78	327

a Maximum 6.81 feet at 6:30 P. M.=2314 sec. ft.
b Maximum 6.91 feet at 6 P. M.=2404 sec. ft.

ESTIMATED MONTHLY DISCHARGE OF TUSCARORA CREEK NEAR PORT ROYAL, JUNIATA COUNTY.

(Drainage area, 205 square miles.)

1911. Month.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
August 21-31, inclusive,	2314	------	------	------	------
September,	2404	78	342	1.668	1.861
October,	692	97	236	1.151	1.327
November,	470	92	192	0.937	1.046
December,	1138	87	337	1.644	1.895

JUNIATA RIVER.

DESCRIPTION OF BASIN.

The Juniata river, the largest tributary of the Susquehanna river, below the forks, drains a crescent shaped area of approximately 3450 square miles, lying in the south central part of Pennsylvania, and entirely within the Allegheny Mountains and their foot hills. This river is formed in Huntingdon county at a point 6 miles east of Huntingdon, by the junction of the Raystown and Frankstown Branches, the former rising on the eastern slope of the mountains in the eastern part of Somerset county, flowing eastward and then northeastward, with a drainage area of approximately 1012 square miles, and the latter rising in the northwestern part of Bedford county, on the eastern slope of the Allegheny divide, and flowing northeasterly and then southeasterly, with a drainage area of approximately 995 square miles.

From the junction of the two branches the Juniata river flows in a general easterly direction through Huntingdon, Mifflin, Juniata and Perry counties, to its mouth at Juniata Bridge, a total distance of about 80 miles. The valley of the stream is narrow, bounded by bordering hills and flows in a winding course, cutting through a succession of sandstone ridges, the channel being generally on a rocky bed, with numerous riffles, separated by pools, in which sediment to considerable depth has collected at some points. The junction of the Frankstown and Raystown Branches lies at an approximate elevation of 610 feet, and the mouth at 360 feet, making an average fall of 3 feet per mile. Draining, as this stream does, a section of the Allegheny mountains, it has many tributaries flowing northerly and southerly between the ridges. The mountains are generally covered with second growth timber, but the larger valleys are deforested and used extensively for farming. The valleys of the river and its main tributaries are rather thickly populated but the headwaters of the tributaries are sparsely inhabited. At one time this river was followed from its mouth to Hollidaysburg by the Pennsylvania Canal, long since abandoned, and replaced by the Main Line of the Pennsylvania Railroad.

The majority of the larger towns receive their domestic water supply from tributaries of the river; the river itself, being thus used only in case of emergency, is, however, considerably employed for industrial purposes. Several of the lower tributaries, as well as both of the branches, drain areas of limestone, which contribute to maintain a fair low water flow.

The mean annual precipitation over almost the entire basin is from 40 to 45 inches.

The discharge has been measured since March 21, 1899, at Newport, 12 miles above the mouth.

SUSQUEHANNA BASIN—STATION NO. 21.

JUNIATA RIVER AT NEWPORT, PA.

DESCRIPTION OF STATION.

This station was established by the United States Geological Survey on March 21st, 1899, at a steel, through truss, highway bridge near the Pennsylvania Railroad Station, at Newport. On April 1st, 1907, this station was taken over by the Water Supply Commission of Pennsylvania and has since been maintained and operated by this Commission.

The channel is straight for one-half mile above and below the station. The right and left banks are high and not subject to overflow. The bed is of hard material and permanent. There is a good measurable velocity under the bridge at all stages.

Discharge measurements are taken from the downstream side of the bridge, the initial point for soundings being end of hand-rail on right bank, downstream side.

On March 29th, 1905, a standard chain gage was fastened to the handrail on the downstream side of the bridge, in the first span. The length of chain from the bottom of the weight to the marker is 36.78 feet. The elevation of zero is 363.32 feet above sea level. (Pennsylvania Railroad Levels) Bench mark No. 1 is extreme east end of stone door sill, east front of Ewing's store building, near end of bridge; elevation, 28.83 feet above gage datum. Bench mark No. 2 is on shelf in southeast corner of underpinning of store of J. M. Ewing; elevation, 28.87 feet above gage datum. Bench mark No. 3 is on top of fire plug in front of Ewing's store; elevation, 29.75 feet above zero of gage, or 393.07 feet above mean sea level. (P. R. R. Bench). The gage is read twice daily by A. R. Bortel.

Since the establishment of this station 37 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF JUNIATA RIVER, AT NEWPORT, PERRY COUNTY, PENNA.

(Drainage area, 3380 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1899.							
1	Mar. 21,	Paul,	------	3486	3.75	6.60	13094	
2	June 9,	do.	------	1158	1.64	3.20	1903	
3	July 31,	do.	------	849	0.80	2.90	682	
4	Sept. 14,	do.	------	1755	2.64	4.55	4625	
5	Oct. 18,	do.	------	661	1.25	2.90	829	
	1900.							
6	May 17,	Paul,	------	1139	1.56	3.40	1778	
7	Sept. 22,	do.	------	723	0.58	2.80	418	
	1901.							
8	Aug. 14,	Paul,	------	1080	1.77	3.40	1915	
9	Oct. 24,	do.	------	881	1.46	3.10	1288	
	1902.							
10	April 19,	Paul,	------	2093	3.24	5.00	6779	
11	Sept. 17,	do.	------	702	1.05	2.84	734	
	1903.							
12	Mar. 9,	Murphy,	------	2978	3.64	6.21	10843	
13	April 2,	do.	------	2988	3.53	6.21	10555	
14	May 7,	do.	------	1409	3.10	3.96	2963	
15	June 3,	Hoyt,	------	1102	1.38	3.40	1525	
16	Oct. 6,	Sawyer,	------	1044	1.58	3.40	1655	
17	Nov. 3,	Brundage & Sawyer,	------	1062	1.51	3.33	1604	
	1904.							
18	July 16,	Grover,	------	1520	2.73	4.28	4152	
	1905.							
19	Mar. 24,	Follansbee,	608	4012	4.14	8.56	16630	
20	Mar. 27,	do.	608	3730	4.47	8.20	16690	
21	Mar. 29,	do.	576	2509	3.91	6.23	9805	
22	April 1,	Morse,	575	2182	3.49	5.68	7605	
23	April 4,	Harley,	550	1464	2.78	4.39	4068	
24	July 4,	Grover,	512	1113	2.04	3.70	2271	
25	July 6,	Grover & Biggi,	512	1057	1.80	3.48	1901	
	1906.							
26	June 28,	U. S. G. S.,	534	1190	1.96	3.78	2330	
	1907.							
27	July 24,	Horton,	469	986	1.64	3.32	1618	
28	Oct. 11,	Grant,	505	1050	1.51	3.41	1590	
	1908.							
29	Feb. 16,	Gannett,	617	7153	5.58	13.70	39945	Float measurement.
30	Feb. 17,	Gannett & Grant	616	5505	4.97	10.80	27351	
31	Feb 17,	do.	615	5054	4.88	10.20	24679	Float measurement.
32	Mar. 9,	Grant,	619	6542	5.40	12.58	35331	
33	Mar. 19,	Gannett,	637	10703	6.88	19.15	73652	
34	Sept. 10,	Langenheim,	470	848	0.77	2.74	652	
	1909.							
35	May 13,	Grant,	541	1604	3.00	4.40	4820	
	1911.							
36	Dec. 9,	Boehringer,	514	1087	1.52	3.63	1649	
	1912.							
37	April 25,	Reckord & Boehringer,	565	2160	3.41	5.40	7366	0.6 msmt.

DISCHARGE TABLE FOR JUNIATA RIVER AT NEWPORT, PERRY COUNTY, FROM MARCH 21, 1899, TO DECEMBER 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
2.60	470	.30	13475	12.00	32650	.70	58000	.40	88280
.70	570	.40	13800	.10	33125	.80	58600	.50	88925
.80	680	.50	14150	.20	33600	.90	59225	.60	89570
.90	825	.60	14500	.30	34075	17.00	59850	.70	90215
3.00	980	.70	14850	.40	34550	.10	60480	.80	90860
.10	1145	.80	15200	.50	35025	.20	61115	.90	91505
.20	1320	.90	15550	.60	35500	.30	61755	22.00	92150
.30	1505	8.00	15900	.70	35975	.40	62400	.10	92815
.40	1700	.10	16250	.80	36450	.50	63000	.20	93480
.50	1900	.20	16600	.90	36900	.60	63600	.30	94145
.60	2115	.30	16950	13.00	37350	.70	64200	.40	94810
.70	2335	.40	17300	.10	37835	.80	64800	.50	95475
.80	2555	.50	17685	.20	38320	.90	65450	.60	96140
.90	2800	.60	18070	.30	38810	18.00	66100	.70	96805
4.00	3050	.70	18460	.40	39300	.10	66760	.80	97470
.10	3315	.80	18850	.50	39825	.20	67420	.90	98135
.20	3600	.90	19250	.60	40350	.30	68080	23.00	98800
.30	3885	9.00	19650	.70	40875	.40	68750	.10	99440
.40	4170	.10	20035	.80	41400	.50	69410	.20	100080
.50	4450	.20	20420	.90	41925	.60	70070	.30	100720
.60	4735	.30	20810	14.00	42450	.70	70730	.40	101360
.70	5020	.40	21200	.10	43000	.80	71400	.50	102000
.80	5325	.50	21600	.20	43550	.90	72050	.60	102640
.90	5635	.60	22000	.30	44100	19.00	72700	.70	103280
5.00	5945	.70	22400	.40	44650	.10	73370	.80	103920
.10	6250	.80	22800	.50	45210	.20	74040	.90	104560
.20	6550	.90	23225	.60	45770	.30	74720	24.00	105200
.30	6850	10.00	23650	.70	46335	.40	75400	.10	105845
.40	7145	.10	24110	.80	46900	.50	76050	.20	106490
.50	7445	.20	24570	.90	47450	.60	76700	.30	107135
.60	7750	.30	25035	15.00	48000	.70	77350	.40	107780
.70	8065	.40	25500	.10	48600	.80	78000	.50	108425
.80	8385	.50	25925	.20	49200	.90	78600	.60	109070
.90	8710	.60	26350	.30	49800	20.00	79200	.70	109715
6.00	9045	.70	26775	.40	50400	.10	79850	.80	110360
.10	9370	.80	27200	.50	50975	.20	80500	.90	111005
.20	9700	.90	27650	.60	51550	.30	81150	25.00	111650
.30	10050	11.00	28100	.70	52125	.40	81800	.10	112285
.40	10400	.10	28550	.80	52700	.50	82450	.20	112920
.50	10750	.20	29000	.90	53275	.60	83100	.30	113555
.60	11100	.30	29450	16.00	53850	.70	83750	.40	114190
.70	11450	.40	29900	.10	54435	.80	84400	.50	114825
.80	11800	.50	30360	.20	55020	.90	85050	.60	115460
.90	12150	.60	30820	.30	55610	21.00	85700	.70	116095
7.00	12500	.70	31285	.40	56200	.10	86345	.80	116730
.10	12825	.80	31750	.50	56800	.20	86990	.90	117365
.20	13150	.90	32200	.60	57400	.30	87635	26.00	118000

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF JUNIATA RIVER, AT NEWPORT, PERRY COUNTY, PENNA.

1899.	MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G L.	Dis.
1,	-----	-----	7.0	12500	3.4	1700	3.1	1145	2.7	570	3.0	980	3.5	1900	3.2	1320	2.7	570	3.3	1505
2,	-----	-----	6.1	9370	3.4	1700	3.6	2115	2.7	570	3.0	980	3.5	1900	3.1	1145	4.0	3050	3.3	1505
3,	-----	-----	5.5	7445	3.6	2115	3.5	1900	2.6	570	3.0	980	3.4	1700	3.1	1145	4.9	5635	3.3	1505
4,	-----	-----	5.1	6250	3.7	2335	3.4	1700	2.5	380	3.0	980	3.4	1700	3.1	1145	4.6	4735	3.3	1505
5,	-----	-----	4.9	5635	3.5	1900	3.3	1505	3.0	980	3.0	980	3.2	1320	3.0	980	4.2	3600	3.3	1505
6,	-----	-----	4.5	4450	3.4	1700	3.4	1700	3.0	980	3.0	980	3.3	1505	3.0	980	3.9	2800	3.2	1320
7,	-----	-----	4.3	3885	3.4	1700	3.3	1505	3.0	980	3.3	1505	3.3	1505	3.0	980	3.7	2335	3.1	1145
8,	-----	-----	5.6	7750	3.4	1700	3.2	1320	3.0	980	3.5	1900	3.3	1505	3.0	980	3.5	1900	3.1	1145
9,	-----	-----	7.8	15200	3.6	2115	3.2	1320	3.1	1145	3.3	1505	3.3	1505	2.9	825	3.5	1900	3.1	1145
10,	-----	-----	6.9	12150	3.6	2115	2.8	680	3.3	1505	3.2	1320	3.3	1505	2.9	825	3.4	1700	3.1	1145
11,	-----	-----	5.8	8385	4.0	3050	2.8	680	3.3	1505	3.1	1145	3.3	1505	2.9	825	3.3	1505	3.1	1145
12,	-----	-----	5.5	7445	4.1	3315	2.8	680	3.3	1505	3.1	1145	3.4	1700	2.9	825	3.3	1505	3.7	2335
13	-----	-----	5.1	6250	4.0	3050	2.8	680	3.1	1145	3.4	1700	4.8	5325	2.9	825	3.3	1505	4.8	5325
14,	-----	-----	4.9	5635	3.8	2555	2.7	570	3.1	1145	3.1	1145	4.8	5325	2.9	825	3.2	1320	5.5	7445
15,	-----	-----	4.8	5325	3.8	2555	2.7	570	3.1	1145	3.1	1145	3.8	2555	2.9	825	3.2	1320	5.1	6250
16,	-----	-----	4.7	5020	3.6	2115	2.7	570	3.0	980	3.0	980	3.5	1900	2.9	825	3.2	1320	4.8	5325
17,	-----	-----	5.5	7445	3.7	2335	2.7	570	2.9	825	3.0	980	3.3	1505	2.9	825	3.2	1320	4.3	3885
18,	-----	-----	4.4	4170	4.1	3315	2.7	570	2.9	825	3.0	980	3.1	1145	2.9	825	3.1	1145	4.0	3050
19,	-----	-----	4.3	3885	8.0	15900	2.6	470	2.9	825	3.0	980	3.1	1145	2.9	825	3.1	1145	4.0	3050
20,	-----	-----	4.1	3315	7.3	13475	2.6	470	3.0	980	3.1	1145	3.1	1145	2.9	825	3.1	1145	3.7	2335
21,	6.5	10750	4.0	3050	7.6	14500	2.6	470	3.0	980	3.0	980	3.1	1145	2.9	825	3.1	1145	3.7	2335
22,	6.0	9045	3.9	2800	5.1	6250	2.6	470	3.0	980	3.0	980	3.1	1145	2.9	825	3.1	1145	5.0	5945
23,	5.7	8065	3.8	2555	4.7	5020	2.5	380	3.0	980	2.9	825	3.1	1145	2.8	680	3.1	1145	5.0	5945
24,	6.0	9045	3.8	2555	4.4	4170	2.5	380	3.0	980	2.9	825	3.1	1145	2.8	680	3.4	1700	5.0	5945
25,	5.5	7445	3.7	2335	4.0	3050	2.5	380	3.0	980	2.9	825	3.1	1145	2.8	680	4.0	3050	5.8	8385
26,	5.2	6550	3.6	2115	3.7	2335	2.5	380	3.0	980	2.9	825	3.1	1145	2.8	680	4.0	3050	5.5	7445
27,	5.1	6250	3.6	2115	3.7	2335	2.5	380	2.8	680	2.9	825	3.1	1145	2.8	680	3.8	2555	4.5	4450
28,	5.1	6250	3.6	2115	3.7	2335	2.5	380	2.9	825	4.4	4170	3.2	1320	2.8	680	3.6	2115	4.3	3885
29,	8.8	18850	3.5	1900	3.7	2335	2.7	570	2.9	825	4.1	3315	3.3	1505	2.8	680	3.5	1900	4.1	3315
30	10.3	25035	3.4	1700	4.1	3315	2.7	570	2.9	825	5.0	5945	3.3	1505	2.7	570	3.4	1700	4.1	3315
31,	8.3	16950	-----	-----	3.1	1145	-----	-----	2.9	825	4.4	4170	-----	-----	2.7	570	-----	-----	4.1	3315

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF JUNIATA RIVER. AT NEWPORT, PERRY COUNTY, PENNA.

1900.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.1	3315	3.7	2335	5.9	8710	4.5	4450	4.1	3315	3.3	1505	3.3	1505	3.0	980	3.3	1505	2.8	680	3.0	980	4.4	4170
2,	4.1	3315	3.4	1700	12.9	36900	4.5	4450	4.1	3315	3.3	1505	3.2	1320	3.0	980	3.2	1320	2.9	825	3.0	980	4.1	3315
3,	4.6	4735	3.4	1700	8.0	15900	4.5	4450	4.0	3050	3.4	1700	3.1	1145	3.0	980	3.2	1320	2.9	825	3.0	980	3.9	2800
4,	5.0	5945	3.5	1900	6.0	9045	4.4	4450	3.9	2800	3.7	2335	3.1	1145	3.0	980	3.1	1145	2.9	825	3.0	980	3.9	2800
5,	5.0	5945	3.8	2555	5.5	7445	4.5	4450	3.8	2555	3.6	2115	3.1	1145	3.0	980	2.9	825	2.9	825	2.9	825	5.5	7445
6,	4.7	5020	4.4	4170	5.4	7145	4.6	4735	3.7	2335	3.4	1700	3.1	1145	3.0	980	2.9	825	2.9	825	2.9	825	7.0	12500
7,	5.2	6550	4.1	3315	6.0	9045	4.5	4450	3.7	2335	3.4	1700	3.1	1145	2.9	825	2.9	825	2.9	825	3.0	980	6.3	10050
8,	4.0	3050	4.2	3600	6.4	10400	4.4	4170	3.7	2335	3.3	1505	3.1	1145	2.9	825	2.8	680	2.9	825	3.0	980	5.2	6550
9,	4.2	3600	5.1	6250	5.6	7750	4.4	4170	3.6	2115	3.4	1700	3.1	1145	2.9	825	2.8	680	2.9	825	3.0	980	4.6	4735
10,	4.1	3315	5.6	7750	5.4	7145	4.4	4170	3.6	2115	3.5	1900	3.1	1145	2.8	680	2.8	680	2.9	825	3.0	980	4.5	4450
11,	4.1	3315	4.8	5325	5.1	6250	4.4	4170	3.5	1900	3.4	1700	3.1	1145	2.8	680	2.8	680	2.9	825	2.9	825	4.3	3885
12,	4.8	5325	4.6	4735	5.1	6250	4.3	3885	3.5	1900	3.3	1505	3.1	1145	2.8	680	2.8	680	3.0	980	2.9	925	4.2	3600
13,	4.6	4735	5.4	7145	4.9	5635	4.3	3885	3.5	1900	3.3	1505	3.1	1145	2.8	680	2.8	680	3.0	980	2.9	825	4.0	3050
14,	4.2	3600	9.4	21200	4.8	5325	4.3	3885	3.5	1900	3.3	1505	3.0	980	2.8	680	2.8	680	3.0	980	2.9	825	3.8	2555
15	3.9	2800	7.6	14500	4.7	5020	4.3	3885	3.5	1900	3.3	1505	3.0	980	2.8	680	2.8	680	3.0	980	3.0	980	3.7	2335
16,	3.5	1900	5.9	8710	4.6	4735	4.1	3315	3.5	1900	3.3	1505	3.0	980	2.8	680	2.8	680	3.0	980	3.0	980	3.7	2335
17,	4.1	3315	5.3	6850	4.1	3315	4.0	3050	3.4	1700	3.3	1505	3.0	980	2.8	680	2.8	680	3.0	980	3.0	980	3.6	2115
18,	3.8	2555	4.9	5635	4.1	3315	4.0	3050	3.4	1700	3.3	1505	3.0	980	2.8	680	2.8	680	3.0	980	3.0	980	3.3	1505
19,	4.2	3600	4.1	3315	4.1	3315	4.4	4170	3.5	1900	3.3	1505	2.9	825	2.8	680	2.8	680	3.0	980	3.0	980	3.5	1900
20,	4.9	5635	4.2	3600	4.4	4170	4.7	5020	3.7	2335	3.3	1505	2.9	825	2.8	680	2.8	680	3.0	980	3.0	980	3.7	2335
21,	10.6	26350	4.4	4170	6.5	10750	4.5	4450	4.0	3050	3.3	1505	2.9	825	2.8	680	2.8	680	3.0	980	3.0	980	3.8	2555
22,	10.2	24570	11.7	31285	6.5	10750	4.5	4450	3.7	2335	3.3	1505	2.9	825	2.8	680	2.8	680	3.0	980	3.0	980	3.8	2555
23,	7.2	13150	11.1	28550	5.7	8065	4.5	4450	3.7	2335	3.3	1505	2.9	825	2.8	680	2.8	680	2.9	825	3.1	1145	3.6	2115
24,	6.0	9045	8.2	16600	5.7	8065	4.7	5020	3.6	2115	3.3	1505	3.2	1320	2.8	680	2.8	680	3.7	2335	3.1	1145	3.4	1700
25,	5.2	6550	5.9	8710	5.6	7750	4.7	5020	3.5	1900	3.2	1320	3.1	1145	3.3	1505	2.8	680	3.4	1700	4.0	3050	3.8	2555
26,	5.0	5945	4.5	4450	5.4	7145	4.7	5020	3.5	1900	3.2	1320	3.1	1145	3.3	1505	2.8	680	3.3	1505	6.3	10050	3.5	1900
27,	4.8	5325	4.4	4170	5.1	6250	4.4	4170	3.2	1320	3.6	2115	3.1	1145	3.7	2335	2.8	680	3.3	1505	11.6	30820	3.3	1505
28,	4.4	4170	4.6	4735	5.0	5945	4.3	3885	3.3	1505	3.4	1700	3.1	1145	3.4	1700	2.8	680	3.2	1320	8.0	15900	3.2	1320
29,	4.4	4170	------	------	4.8	5325	4.2	3600	3.3	1505	3.3	1505	3.1	1145	3.3	1505	2.8	680	3.2	1320	5.7	8065	3.2	1320
30,	4.2	3600	------	------	4.6	4735	4.2	3600	3.3	1505	3.3	1505	3.0	980	3.7	2335	2.8	680	3.1	1145	4.8	5325	3.2	1320
31,	4.1	3315	------	------	4.5	4450	------	-----	3.3	1505	------	------	3.0	980	3.6	2115	------	---	3.0	980	------	------	3.2	1320

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF JUNIATA RIVER, AT NEWPORT, PERRY COUNTY, PENNA.

1901.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.4	1700	3.4	1700	3.5	1900	5.1	6250	1.8	5325	8.8	18850	4.1	3315	3.5	1900	5.1	7145	3.6	2115	3.0	980	3.6	2115
2,	3.3	1505	3.3	1505	3.5	1900	4.9	5635	4.7	5020	7.7	14850	4.2	3600	3.5	1900	5.4	7145	3.4	1700	3.0	980	3.5	1900
3,	3.3	1505	3.3	1505	3.6	2115	4.9	5635	4.5	4450	7.1	12825	4.2	3600	3.5	1900	5.2	6550	3.5	1900	3.0	980	4.2	3600
4,	3.1	1145	3.4	1700	3.6	2115	7.6	14500	4.6	4735	6.1	9370	a4.0	3050	3.3	1505	5.0	5945	3.5	1900	3.0	980	4.2	3600
5,	3.3	1505	3.8	2555	4.4	4170	9.0	19650	4.5	4450	5.2	6550	a3.9	2800	3.1	1145	4.6	4735	3.5	1900	3.0	980	4.2	3600
6,	3.4	1700	4.3	3885	4.8	5325	10.5	25925	4.4	4170	5.0	5945	a3.8	2555	3.1	1145	4.2	3600	3.4	1700	3.0	980	4.2	3600
7,	3.2	1320	4.3	3885	4.7	5020	11.0	28100	4.2	3600	4.9	5635	a3.7	2335	4.5	4450	4.0	3050	3.3	1505	3.0	980	4.2	3600
8,	3.6	2115	4.3	3885	4.4	4170	10.9	27650	4.1	3315	5.3	6850	a3.6	2115	6.2	9700	3.9	2800	3.2	1320	3.0	980	3.7	2335
9,	3.3	1505	4.3	3885	4.2	3600	9.5	21600	4.0	3050	5.1	6250	a3.5	1900	5.0	5945	3.7	2335	3.2	1320	3.0	980	4.2	3600
10,	3.2	1320	4.3	3885	5.0	5945	7.9	15550	4.2	3600	4.6	4735	a3.4	1700	4.1	3315	3.6	2115	3.1	1145	3.0	980	5.0	5945
11,	3.2	1320	4.0	3050	15.9	53275	7.0	12500	4.7	5020	4.5	4450	3.3	1505	4.0	3050	3.7	2335	3.1	1145	3.0	980	7.0	12500
12,	3.5	1900	3.8	2555	15.4	50400	6.2	9700	4.8	5325	4.5	4450	3.3	1505	3.7	2335	4.1	3315	3.2	1320	3.0	980	6.2	9700
13,	3.8	2555	3.8	2555	10.4	25500	5.8	8385	4.8	5325	4.5	4450	3.3	1505	3.5	1900	4.0	3050	3.3	1505	3.0	980	5.1	6250
14,	3.8	2555	4.3	3885	7.8	15200	5.4	7145	4.7	5020	4.5	4450	3.4	1700	3.4	1700	3.8	2555	3.4	1700	3.0	980	5.2	6550
15,	3.8	2555	3.8	2555	7.2	13150	5.2	6550	4.6	4735	4.4	4170	3.4	1700	3.4	1700	3.8	2555	3.4	1700	3.0	980	18.0	66100
16,	3.8	2555	3.8	2555	6.5	10750	5.6	7750	4.4	4170	4.4	4170	3.5	1900	3.4	1700	3.8	2555	3.3	1505	3.0	980	18.0	66100
17,	3.8	2555	3.6	2115	5.8	8385	5.6	7750	4.1	3315	4.5	4450	4.9	5635	3.4	1700	3.7	2335	3.3	1505	3.0	980	10.8	27200
18,	3.8	2555	3.5	1900	5.5	7445	5.4	7145	4.2	3600	5.0	5945	5.0	5945	4.1	3315	3.8	2555	3.3	1505	3.0	980	13.65	40610
19,	3.8	2555	3.5	1900	5.1	6250	5.4	7145	4.1	3315	4.6	4735	5.2	6550	4.3	3885	3.9	2800	3.2	1320	3.0	980	6.3	10050
20,	3.8	2555	3.5	1900	5.0	5945	5.4	7145	4.1	3315	4.4	4170	4.8	5325	5.3	6850	3.7	2335	3.2	1320	3.0	980	5.3	6850
21,	3.8	2555	3.5	1900	5.9	8110	10.5	25925	4.1	3315	4.3	3885	4.1	3315	4.1	3315	3.6	2115	3.1	1145	3.0	980	12.05	32890
22,	3.9	2800	3.5	1900	6.9	12150	13.8	41400	4.5	4450	4.6	4735	3.8	2555	4.1	3315	3.5	1900	3.1	1145	3.0	980	4.1	3315
23,	4.1	3315	3.6	2115	6.5	10750	11.5	30360	13.0	37350	5.3	6850	3.7	2335	4.1	3315	3.4	1700	3.1	1145	3.0	980	4.4	4170
24,	3.7	2335	3.7	2335	5.8	8385	9.0	19650	9.5	21600	5.6	7750	3.5	1900	5.5	7445	3.2	1320	3.1	1145	3.8	2555	4.4	4170
25,	3.5	1900	3.9	2800	5.5	7445	7.6	14500	9.0	19650	5.0	5945	3.4	1700	5.5	7445	3.3	1505	3.0	980	4.9	5635	4.6	4735
26,	3.4	1700	3.4	1700	5.3	6850	6.8	11800	10.6	26350	4.6	4735	3.7	2335	5.1	6250	3.3	1505	3.0	980	4.8	3325	4.8	5325
27,	3.7	2335	3.4	1700	5.5	7445	6.0	9045	8.6	18070	4.4	4170	3.5	1900	4.9	5635	3.2	1320	3.0	980	4.0	3050	4.5	4450
28,	3.7	2335	3.5	1900	6.6	11100	5.6	7750	10.3	25035	4.2	3600	3.5	1900	4.3	3885	3.2	1320	3.0	980	4.0	3050	4.5	4450
29,	3.6	2115	------	------	6.5	10750	5.3	6850	12.6	35500	4.0	3050	3.4	1700	4.2	3600	3.5	1900	3.0	980	3.9	2800	5.2	6550
30,	3.5	1900	------	------	5.9	8710	5.0	5945	13.3	38810	4.0	3050	3.4	1700	4.3	3885	3.5	1900	3.0	980	3.7	2335	6.4	10400
31,	3.6	2115	------	------	5.4	7145	------	------	11.6	30820	------	------	3.4	1700	4.3	3885	------	------	3.0	980	------	------	7.7	14850

a Estimated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF JUNIATA RIVER, AT NEWPORT, PERRY COUNTY, PENNA.

1902.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.4	10400	4.2	3600	25.3	113555	5.8	8385	4.0	3050	3.2	1320	5.4	7145	4.4	4170	3.0	980	4.9	5635	4.0	3050	3.6	2115
2,	5.6	7750	4.2	3600	19.5	76050	5.7	8065	3.8	2555	3.2	1320	6.3	10050	4.0	3050	3.0	980	4.9	5635	3.8	2555	3.6	2115
3,	5.0	5945	4.6	4735	15.5	50975	5.4	7145	3.8	2555	3.2	1320	6.1	9370	3.5	1900	2.9	825	3.5	1900	3.7	2335	4.3	3885
4,	5.4	7145	3.9	2800	12.0	32650	5.3	6850	3.9	2800	3.2	1320	6.4	10400	4.0	3050	2.9	825	3.5	1900	3.6	2115	5.3	6850
5,	4.3	3885	4.5	4450	9.3	20810	5.0	5945	3.9	2800	3.2	1320	6.7	11450	4.0	3050	2.9	825	3.5	1900	3.6	2115	5.5	7445
6,	4.2	3600	3.6	2115	7.1	12825	5.0	5945	3.9	2800	3.2	1320	5.6	7750	4.0	3050	2.9	825	4.0	3050	3.5	1900	4.9	5635
7,	4.2	3600	3.6	2115	6.5	10750	5.2	6550	3.9	2800	3.2	1320	5.4	7145	3.8	2555	2.9	825	4.0	3050	3.4	1700	4.5	4450
8,	4.2	3600	3.7	2335	6.0	9045	14.65	46050	3.9	2800	3.1	1145	5.0	5945	3.8	2555	2.9	825	3.8	2555	3.3	1505	4.5	4450
9,	4.1	3315	5.1	6250	5.5	7445	18.5	69410	3.9	2800	3.1	1145	4.5	4450	3.8	2555	2.9	825	3.5	1900	3.4	1700	4.2	3600
10,	4.1	3315	5.8	8385	6.2	9700	18.5	69410	3.9	2800	3.1	1145	4.8	5325	4.0	3050	3.1	1145	3.4	1700	3.4	1700	4.4	4170
11,	4.1	3315	5.8	8385	8.4	17300	12.5	35025	3.7	2335	3.1	1145	4.6	4735	4.6	4735	3.1	1145	3.4	1700	3.4	1700	4.2	3600
12,	4.0	3050	5.7	8065	9.5	21600	10.0	23650	3.5	1900	3.1	1145	4.0	3050	3.9	2800	3.0	980	4.6	4735	3.3	1505	5.3	6850
13,	3.9	2800	5.0	5945	13.3	38810	8.1	16250	3.5	1900	3.2	1320	3.9	2800	3.8	2555	3.0	980	6.4	10400	3.3	1505	7.7	14850
14,	3.9	2800	4.5	4450	14.1	43000	7.0	12500	3.3	1505	3.3	1505	3.9	2800	3.6	2115	2.9	825	6.0	9045	3.3	1505	4.8	5325
15,	3.7	2335	4.3	3885	9.6	22000	6.5	10750	3.3	1505	3.3	1505	3.8	2555	3.3	1505	2.9	825	4.7	5020	3.3	1505	6.4	10400
16,	3.5	1900	5.1	6250	9.0	19650	5.5	7445	3.3	1505	4.3	3885	3.6	2115	3.4	1700	2.9	825	4.4	4170	3.2	1320	5.8	8385
17,	3.8	2555	5.1	6250	15.3	49800	5.0	5945	3.4	1700	3.8	2555	3.6	2115	3.4	1700	2.9	825	4.0	3050	3.2	1320	7.7	14850
18	3.8	2555	5.1	6250	12.5	35025	5.0	5945	3.4	1700	3.9	2800	3.6	2115	3.3	1505	2.9	825	3.8	2555	3.2	1320	7.0	12500
19,	7.5	14150	5.1	6250	9.5	21600	4.9	5635	3.4	1700	3.5	1900	3.6	2115	3.3	1505	2.8	680	3.8	2555	3.2	1320	6.4	10400
20.	4.0	3050	4.9	5635	8.0	15900	4.7	5020	3.4	1700	3.3	1505	3.5	1900	3.2	1320	2.9	825	3.5	1900	3.2	1320	5.7	8065
21,	4.0	3050	4.8	5325	6.5	10750	4.6	4735	3.4	1700	3.4	1700	3.6	2115	3.1	1145	2.9	825	3.4	1700	3.2	1320	6.2	9700
22,	9.5	21600	4.8	5325	6.0	9045	4.5	4450	3.4	1700	3.1	1145	3.7	2335	3.2	1320	2.8	680	3.3	1505	3.2	1320	9.5	21600
23,	8.2	16600	4.9	5635	5.5	7445	4.4	4170	3.4	1700	3.1	1145	3.6	2115	3.1	1145	2.8	680	3.4	1700	3.2	1320	10.8	27200
24,	6.2	9700	4.4	4170	5.5	7445	4.3	3885	3.4	1700	3.1	1145	3.5	1900	3.3	1505	2.8	680	3.3	1505	3.2	1320	8.6	18070
25,	5.0	5945	4.5	4450	5.1	6250	4.2	3600	3.4	1700	3.1	1145	4.1	3315	3.2	1320	3.0	980	3.2	1320	3.2	1320	7.4	13800
26,	4.6	4735	9.0	19650	5.0	5945	4.1	3315	3.4	1700	4.0	3050	3.8	2555	3.2	1320	3.3	1505	3.2	1320	3.3	1505	6.3	10050
27,	5.7	8065	9.9	23225	4.8	5325	3.8	2555	3.6	2115	3.8	2555	3.5	1900	2.9	825	4.2	3600	3.2	1320	3.5	1900	5.8	8385
28,	7.5	14150	14.9	47450	4.5	4450	3.8	2555	3.4	1700	3.9	2800	3.5	1900	4.3	3885	3.6	2115	3.8	2555	3.7	2335	5.3	6850
29,	5.6	7750	------	------	4.2	3600	4.0	3050	3.3	1505	3.9	2800	3.6	2115	4.7	5020	3.5	1900	5.7	8065	3.8	2555	4.8	5325
30,	5.0	5945	------	------	5.8	8385	4.1	3315	3.3	1505	4.7	5020	4.2	3600	3.3	1505	3.5	1900	5.0	5945	3.8	2555	4.7	5020
31,	4.5	4450	------	------	6.0	9045	------	------	3.2	1320	------	------	4.2	3600	2.9	825	------	------	4.4	4170	------	------	4.7	5020

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF JUNIATA RIVER, AT NEWPORT, PERRY COUNTY, PENNA.

1903	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.6	4735	8.2	16600	15.5	50975	7.0	12500	3.8	2555	3.5	1900	9.5	21600	3.5	1900	6.1	9370	2.4	1700	3.5	1900	3.3	1505
2	5.3	6850	6.9	12150	12.1	33125	6.3	10050	3.8	2555	3.4	1700	6.1	9370	3.5	1900	5.6	7750	3.4	1700	3.5	1900	3.3	1505
3,	5.3	6850	6.7	11450	9.0	19650	5.6	7750	4.1	3315	3.4	1700	5.2	6550	3.4	1700	5.1	6250	2.3	1505	3.3	1505	3.2	1320
4,	7.9	15550	10.1	24110	7.5	14150	5.2	6550	4.1	3315	3.4	1700	4.8	5325	3.4	1700	4.5	4450	3.3	1505	3.3	1505	3.2	1320
5,	7.5	14150	14.5	45210	6.7	11450	5.2	6550	4.0	3050	3.3	1505	4.5	4450	3.5	1900	4.3	3885	3.3	1505	3.3	1505	3.2	1320
6,	6.6	11100	11.5	30360	6.3	10050	5.1	6250	4.0	3050	3.3	1505	5.0	5945	3.5	1900	4.2	3600	3.4	1700	3.3	1505	3.2	1320
7,	6.0	9045	8.5	17685	6.6	9045	4.8	5325	4.0	3050	3.3	1505	9.5	21600	3.8	2555	4.1	3315	3.4	1700	3.3	1505	3.2	1320
8,	5.0	5945	7.1	12825	5.8	8385	5.3	6850	3.8	2555	4.0	3050	6.8	11800	4.0	3050	4.0	3050	3.9	2800	3.3	1505	3.2	1320
9,	5.5	7445	6.5	10750	6.4	10400	5.6	7750	3.8	2555	4.2	3600	5.4	7145	3.8	2555	4.3	3885	3.8	2555	3.3	1505	3.3	1505
10,	4.7	5020	5.8	8385	6.9	12150	5.8	8385	3.8	2555	4.2	3600	4.9	5635	3.7	2335	5.0	5945	3.4	7145	3.3	1505	3.35	1505
11,	4.3	3885	5.3	6850	6.6	11100	5.6	7750	3.7	2335	4.3	3885	4.5	4450	3.5	1900	4.7	5020	4.8	5325	3.3	1505	3.3	1505
12,	4.0	3050	6.1	9370	6.3	10050	5.4	7145	3.6	2115	4.3	3885	4.4	4170	3.5	1900	4.9	5635	4.5	4450	3.3	1505	3.1	1145
13,	3.8	2555	6.6	11100	5.9	8710	5.5	7445	3.6	2115	5.0	5945	4.5	4450	3.4	1700	4.6	4735	4.2	3600	3.3	1505	3.1	1145
14,	4.4	4170	6.2	10050	5.5	7445	6.6	11100	3.6	2115	4.7	5020	4.4	4170	3.3	1505	4.2	3600	4.1	3315	3.3	1505	3.2	1320
15,	4.5	4450	5.9	8710	5.3	6850	13.1	37835	3.5	1900	4.8	5325	4.4	4170	3.3	1505	4.0	3050	3.9	2800	3.3	1505	3.3	1505
16,	4.3	3885	5.8	8385	5.0	5945	15.6	51550	3.5	1900	4.7	5020	4.2	3600	4.2	3600	3.9	2800	3.9	2800	3.3	1505	3.2	1320
17,	4.4	4170	10.2	24570	4.9	5635	14.0	42450	3.5	1900	4.6	4735	4.0	3050	3.9	2800	3.9	2800	3.8	2555	3.4	1700	3.2	1320
18	4.3	3885	7.9	15550	4.9	5635	9.4	21200	3.5	1900	4.3	3885	5.0	5945	3.5	1900	4.3	3885	4.2	3600	3.5	1900	3.5	1900
19,	4.4	4170	6.7	11450	4.7	5020	8.0	15900	3.5	1900	4.1	3315	7.5	14150	3.5	1900	4.6	4735	4.4	4170	3.5	1900	3.7	2335
20.	4.3	3885	6.0	9045	4.5	4450	7.1	12825	3.5	1900	4.1	3315	6.0	9045	3.4	1700	4.1	3315	4.2	3600	3.6	2115	3.7	2335
21,	4.9	5635	5.4	7145	4.5	4450	6.5	10750	3.5	1900	4.1	3315	5.2	6550	3.4	1700	4.0	3050	4.0	3050	3.7	2335	3.9	2800
22,	4.9	5635	5.4	7145	4.7	5020	5.8	8385	3.5	1900	4.3	3885	4.7	5020	3.5	1900	3.9	2800	3.9	2800	3.6	2115	3.9	2800
23,	4.8	5325	5.4	7145	5.8	8385	5.4	7145	3.5	1900	4.3	3885	4.4	4170	3.5	1900	3.8	2800	3.8	2555	3.5	1900	3.9	2800
24,	4.8	5325	5.0	5945	12.7	35975	5.2	6550	3.5	1900	4.8	5325	4.3	3885	3.3	1505	3.7	2555	3.7	2335	3.5	1900	3.9	2800
25,	4.8	5325	5.3	6850	12.2	33600	4.9	5635	3.5	1900	6.0	9045	4.1	3315	3.4	1700	3.6	2115	3.6	2115	3.5	1900	3.9	2800
26,	4.6	4735	5.1	6250	8.5	17685	4.8	5325	3.4	1700	5.6	7750	3.9	2800	3.4	1700	3.5	1900	*3.6	2115	3.4	1700	3.9	2800
27,	4.4	4170	5.0	5945	7.1	17825	4.8	5325	3.5	1900	5.0	5945	3.8	2555	3.5	1900	3.5	1900	3.5	1900	3.4	1700	3.9	2800
28,	4.4	4170	8.9	19250	6.3	10050	4.3	3885	3.5	1900	4.5	4450	3.8	2555	3.5	1900	3.5	1900	3.5	1900	3.4	1700	3.9	2800
29,	5.3	6850	......	......	5.6	7750	4.1	3315	3.5	1900	4.6	4735	3.7	2335	3.7	2335	3.4	1700	3.5	1900	3.3	1505	3.9	2800
30,	8.0	15900	......	......	5.5	7445	4.1	3315	3.5	1900	4.9	5635	3.5	1900	8.0	15900	3.4	1700	3.5	1900	3.3	1505	3.9	2800
31,	10.2	24570	......	......	6.2	9700	......	......	3.5	1900	......	......	3.5	1900	6.7	11450	......	......	3.5	1900	......	......	4.2	3600

*Interpolated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF JUNIATA RIVER, AT NEWPORT, PERRY COUNTY, PENNA.

1904.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.2	3600	4.0	3050	7.5	14150	6.7	11450	6.7	11450	4.9	5635	3.7	2335	3.3	1505	3.0	980	2.9	825	2.9	825	2.5	380
2,	4.2	3600	5.0	5945	12.0	32650	13.4	39300	6.1	9370	5.6	7750	3.7	2335	3.3	1505	3.0	980	2.9	825	2.9	825	2.8	680
3,	4.5	4450	5.0	5945	7.2	13150	9.4	21200	5.7	8065	6.0	9045	3.7	2335	3.7	2335	3.0	980	2.9	825	2.9	825	2.9	825
4	4.6	4735	5.0	5945	13.5	39825	7.7	14850	5.3	6850	5.4	7145	3.7	2335	3.6	2115	3.0	980	2.9	825	2.9	825	3.2	1320
5,	4.6	4735	8.0	15900	8.9	19250	6.7	11450	5.0	5945	5.9	8710	3.7	2335	3.6	2115	3.0	980	2.9	825	2.9	825	2.9	825
6,	4.6	4735	8.5	17685	6.0	9045	5.7	8065	4.8	5325	5.9	8710	3.7	2335	3.5	1900	3.0	980	2.9	825	2.8	680	3.1	1145
7,	4.6	4735	11.5	30360	5.5	7445	5.7	8065	4.7	5020	5.4	7145	4.4	4170	3.9	2800	2.9	825	2.9	825	2.8	680	3.2	1320
8,	4.5	4450	a8.5	17685	14.0	42450	5.3	6850	4.6	4735	4.7	5020	5.1	6250	3.5	1900	2.9	825	2.9	825	2.8	680	3.2	1320
9,	4.5	4450	6.5	10750	10.0	23650	5.3	6850	4.5	4450	4.6	4735	5.8	8385	3.3	1505	3.0	980	2.9	825	2.8	680	3.2	1320
10,	4.5	4450	5.0	5945	7.2	13150	6.3	10050	4.4	4170	4.5	4450	7.2	13150	3.3	1505	3.0	980	2.9	825	2.8	680	3.1	1145
11,	4.4	4170	4.6	4735	6.0	9045	6.3	10050	4.3	3885	5.1	6250	8.7	18460	3.2	1320	3.0	980	2.9	825	2.9	825	3.1	1145
12,	4.2	3600	4.2	3600	6.0	9045	6.0	9045	4.2	3600	4.6	4735	7.1	12825	3.2	1320	3.0	980	2.9	825	2.9	825	3.1	1145
13,	4.1	3315	4.0	3050	5.2	6550	5.7	8065	4.2	3600	4.4	4170	5.5	7445	3.1	1145	3.0	980	2.9	825	2.9	825	3.1	1145
14,	4.1	3315	3.9	2800	5.2	6550	5.3	6850	4.2	3600	4.2	3600	5.3	6850	3.1	1145	2.9	825	2.9	825	2.9	825	3.1	1145
15,	4.1	3315	4.1	3315	5.0	5945	5.0	5945	4.2	3600	4.0	3050	4.7	5020	3.1	1145	2.9	825	2.9	825	2.9	825	3.1	1145
16,	4.1	3315	4.2	3600	4.8	5325	4.8	5325	4.2	3600	4.0	3050	4.7	5020	3.1	1145	3.0	980	2.9	825	2.9	825	3.1	1145
17,	4.0	3050	4.4	4170	4.5	4450	4.8	5325	4.2	3600	4.4	4170	4.1	3315	3.0	980	3.0	980	2.9	825	2.9	825	3.1	1145
18,	4.0	3050	5.0	5945	4.5	4450	4.7	5020	4.3	3885	3.9	2800	3.9	2800	3.2	1320	3.0	980	2.9	825	2.9	825	3.1	1145
19	4.0	3050	4.6	4735	4.8	5325	4.4	4170	4.5	4450	3.9	2800	3.8	2555	3.1	1145	3.0	980	2.9	825	2.9	825	3.1	1145
20,	4.0	3050	4.7	5020	4.5	4450	4.4	4170	6.7	11450	3.9	2800	3.9	2800	3.2	1320	2.9	825	2.9	825	2.8	680	3.1	1145
21	4.0	3050	4.7	5020	5.8	8385	4.3	3885	5.9	8710	3.7	2335	3.7	2335	3.2	1320	2.9	825	3.3	1505	2.8	680	3.1	1145
22,	4.9	3050	5.0	5945	5.5	7445	4.2	3600	5.5	7445	5.7	8065	3.6	2115	3.2	1320	2.9	825	3.3	1505	2.8	680	3.1	1145
23,	5.4	7145	5.0	5945	5.8	8385	4.2	3600	4.9	5635	5.5	7445	3.5	1900	3.2	1320	2.9	825	3.2	1320	2.8	680	3.1	1145
24,	†11.0	28100	5.4	7145	8.0	15900	4.0	3050	4.6	4735	5.3	6850	3.8	2555	3.2	1320	2.9	825	3.1	1145	2.7	570	3.2	1320
25,	7.0	12500	7.2	13150	7.5	14150	4.0	3050	4.5	4450	4.4	4170	3.8	2555	3.1	1145	2.9	825	3.1	1145	2.7	570	3.2	1320
26,	5.5	7445	7.4	13800	6.9	12150	4.0	3050	4.6	4735	4.0	3050	3.7	2335	3.1	1145	2.9	825	3.0	980	2.7	570	3.2	1320
27,	4.5	4450	5.9	8710	6.2	9700	4.2	3600	4.7	5020	3.5	1900	3.7	2335	3.0	980	2.9	825	2.9	825	2.7	570	3.5	1900
28,	4.1	3315	4.8	5325	6.2	9700	4.6	4735	4.5	4450	3.8	2555	3.5	1900	3.0	980	2.9	825	2.9	825	2.6	470	3.7	2335
29,	3.8	2555	4.5	4450	5.6	7750	6.5	10750	4.4	4170	3.7	2335	3.4	1700	3.1	1145	2.9	825	2.9	825	2.6	470	3.8	2555
30,	3.7	2335	------	------	5.2	6550	7.5	14150	4.2	3600	3.7	2335	3.3	1505	3.1	1145	2.9	825	2.9	825	2.5	380	3.8	2555
31,	3.8	2555	------	------	5.0	5945	------	------	4.6	4735	------	------	3.3	1505	3.0	980	------	------	2.9	825	------	------	3.8	2555

aInterpolated.

†Ice moved out.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF JUNIATA RIVER, AT NEWPORT, PERRY COUNTY, PENNA.

1905.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.0	3050	4.7	5020	4.3	3885	5.2	6550	3.8	2555	3.7	2335	3.5	1900	3.5	1900	3.6	2115	3.0	980	3.6	2115	5.7	8065
2,	4.3	3885	4.7	5020	4.3	3885	5.1	6250	3.6	2115	3.9	2800	3.5	1900	3.5	1900	3.6	2115	3.2	1320	3.6	2115	5.9	8710
3,	4.5	4450	4.7	5020	4.3	3885	5.1	6250	3.6	2115	3.9	2800	3.5	1900	3.6	2115	3.6	2115	3.2	1320	3.6	2115	7.6	14500
4	4.6	4735	4.7	5020	4.3	3885	4.5	4450	3.5	1900	3.7	2335	3.6	2115	3.5	1900	4.9	5635	3.2	1320	3.6	2115	7.4	13800
5,	4.6	4735	4.5	4450	4.3	3885	4.3	3885	3.5	1900	3.7	2335	3.7	2335	3.5	1900	4.7	5020	3.2	1320	3.6	2115	7.0	12500
6,	4.6	4735	4.5	4450	4.3	3885	4.4	4170	3.5	1900	3.6	2115	3.6	2115	3.4	1700	4.3	3885	3.2	1320	3.6	2115	7.0	12500
7,	5.2	3050	4.5	4450	4.5	4450	4.5	4450	3.5	1900	4.2	3600	3.6	2115	3.4	1700	4.0	3050	3.2	1320	3.5	1900	5.9	8710
8,	7.8	3050	4.4	4170	5.1	6250	4.4	4170	3.6	2115	6.3	10050	3.6	2115	3.2	1320	3.6	2115	3.4	1700	3.5	1900	4.6	4735
9,	6.8	3050	4.4	4170	5.2	6550	4.3	3885	3.6	2115	5.9	8710	3.6	2115	3.2	1320	3.6	2115	3.4	1700	3.5	1900	4.6	4735
10,	6.2	3050	4.4	4170	7.1	12825	4.4	4170	3.5	1900	5.9	8710	3.6	2115	3.4	1700	3.6	2115	3.6	2115	3.5	1900	4.6	4735
11,	6.2	3050	4.4	4170	12.2	33000	4.3	3885	3.5	1900	5.1	6250	3.7	2335	3.7	2335	3.9	2800	3.8	2555	3.5	1900	4.6	4735
12,	6.2	3050	4.2	3600	7.2	13150	4.3	3885	3.5	1900	4.9	5635	3.7	2335	4.0	3050	4.2	3600	3.8	2555	3.5	1900	4.5	4450
13,	5.7	3050	4.1	3315	6.2	9700	4.5	4450	3.6	2115	4.3	3885	3.7	2335	4.2	3600	4.7	5020	3.8	2555	3.4	1700	4.2	3600
14.	5.7	3050	4.1	3315	5.3	6850	4.6	4735	3.7	2335	4.3	3885	3.7	2335	4.6	4735	4.3	3885	3.8	2555	3.9	2800	4.0	3050
15,	6.2	3050	4.1	3315	5.2	6550	4.6	4735	4.1	3315	4.1	3315	3.7	2335	6.35	10225	4.3	3885	3.8	2555	3.4	1700	3.8	2555
16,	6.2	3050	4.1	3315	5.2	6550	4.3	3885	4.5	4450	4.0	3050	3.7	2335	10.0	23650	4.0	3050	3.6	2115	3.4	1700	3.8	2555
17,	6.2	3050	4.1	3315	5.2	6550	4.3	3885	4.7	5020	4.0	3050	3.7	2335	8.0	15900	3.8	2555	3.6	2115	3.4	1700	3.8	2555
18,	6.2	3050	4.1	3315	5.3	6850	4.2	3600	4.5	4450	4.0	3050	3.7	2335	5.0	5940	3.8	2555	3.6	2115	3.4	1700	3.8	2555
19,	6.0	3050	4.1	3315	8.6	18070	4.2	3600	4.5	4450	4.0	3050	3.6	2115	4.6	4735	3.7	2335	4.0	3050	3.4	1700	4.2	3600
20,	6.0	3050	4.1	3315	10.2	24570	4.2	3600	4.5	4450	4.0	3050	3.6	2115	4.0	3050	3.7	2335	4.7	5020	3.4	1700	4.2	3600
21,	5.9	3050	4.1	3315	11.2	29000	4.2	3600	4.1	3315	3.9	2800	3.4	1700	4.0	3050	2.8	680	4.9	5635	3.3	1505	5.3	6850
22,	5.2	3050	4.1	3315	11.7	31285	4.2	3600	4.0	3050	3.9	2800	3.4	1700	3.8	2555	2.6	470	4.9	5635	3.8	2555	6.4	10400
23,	5.2	3050	4.1	3315	10.2	24570	4.0	3050	3.8	2555	3.9	2800	3.3	1505	4.9	5635	2.6	470	4.9	5635	3.2	1320	6.4	10400
24,	5.2	3050	4.1	3315	10.2	24570	3.9	2800	3.7	2335	3.8	2555	3.3	1505	4.8	5325	2.8	680	4.7	5020	3.2	1320	4.8	5325
25,	5.4	3050	4.1	3315	9.2	20420	3.8	2555	3.5	1900	4.1	3315	3.3	1505	4.8	5325	2.8	680	4.7	5020	3.2	1320	4.8	5325
26,	5.9	3050	4.3	3885	9.2	20420	3.8	2555	3.5	1900	3.7	2335	3.6	2115	4.8	5325	2.8	680	4.6	4735	3.2	1320	4.6	4735
27,	5.9	3050	4.3	3885	7.2	13150	3.8	2555	3.5	1900	3.7	2335	3.6	2115	4.8	5325	2.8	680	4.5	4450	3.2	1320	4.6	4735
28,	4.9	5635	4.3	3885	6.2	9700	3.8	2555	3.5	1900	4.1	3315	3.4	1700	4.7	5020	2.7	570	4.5	4450	3.9	2800	4.6	4735
29,	4.9	5635	------	------	6.0	9045	3.8	2555	3.5	1900	4.1	3315	3.6	2115	4.5	4450	2.7	570	4.0	3050	4.3	3885	5.1	6250
30,	4.9	5635	------	------	5.8	8385	3.8	2555	3.5	1900	3.9	2800	3.7	2335	4.0	3050	2.7	570	3.8	2555	5.6	7750	5.4	7145
31,	4.7	5020	------	------	5.2	6550	------	------	3.7	2335	------	------	3.3	1505	3.6	2115	------	------	3.8	2555	------	------	5.2	6550

Note.—January 7-27, ice gorge below causing backwater. Discharge estimated. February 12 to March 8, river frozen at gage, readings to top of ice. Gage height interpolated July 15 and August 12.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF JUNIATA RIVER AT NEWPORT, PERRY COUNTY, PENNA.

1906.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.0	5945	3.9	2800	3.7	2335	10.0	23650	4.0	3050	3.4	1700	4.4	4170
2,	4.9	5635	3.9	2800	3.8	2555	9.8	22800	4.0	3050	3.4	1700	4.2	3600
3,	5.0	5945	3.9	2800	4.0	3050	9.7	22400	4.0	3050	3.4	1700	4.2	3600
4,	7.5	14150	3.8	2555	6.1	9370	8.8	18850	4.0	3050	3.4	1700	4.0	3050
5,	7.5	14150	3.8	2555	6.0	9045	8.4	17300	4.0	3050	3.3	1505	3.8	2555
6,	7.4	13800	3.7	2335	5.9	8710	7.9	15550	4.0	3050	3.3	1505	4.6	4735
7,	6.7	11450	3.7	2335	5.9	8710	7.9	15550	4.2	3600	3.3	1505	3.7	2335
8,	5.9	8710	3.7	2335	5.6	7750	7.9	15550	4.2	3600	3.3	1505	3.8	2555
9,	5.4	7145	3.7	2335	5.0	5945	8.0	15900	4.0	3050	4.35	4030	3.7	2335
10,	4.8	5325	3.8	2555	4.8	5325	7.7	14850	4.0	3050	6.0	9045	3.7	2335
11,	4.8	5325	3.7	2335	4.6	4735	9.3	20810	3.9	2800	4.2	3600	3.6	2115
12,	4.6	4735	3.7	2335	4.6	4735	8.2	16600	3.9	2800	3.6	2115	3.5	1900
13,	4.6	4735	3.6	2115	4.5	4450	8.2	16600	3.8	2555	3.6	2115	3.4	1700
14,	4.6	4735	3.6	2115	4.5	4450	8.0	15900	3.6	2115	3.6	2115	3.4	1700
15,	4.8	5325	3.6	2115	4.5	4450	9.7	22400	3.6	2115	3.4	1700	------	------
16	5.0	5945	3.6	2115	4.5	4450	9.4	21200	3.6	2115	3.4	1700	------	------
17,	5.2	6550	3.5	1900	4.7	5020	8.3	16950	3.6	2115	3.4	1700	------	------
18,	5.2	6550	3.5	1900	4.6	4735	6.6	11100	3.5	1900	4.0	3050	------	------
19,	5.1	6250	3.4	1700	4.4	4170	6.1	9370	3.5	1900	6.9	12150	------	------
20,	5.0	5945	3.4	1700	4.4	4170	5.6	7750	3.5	1900	6.7	11450	------	------
21,	5.0	5945	3.4	1700	4.4	4170	5.3	6850	3.4	1700	5.3	6850	------	------
22,	5.0	5945	3.4	1700	4.3	3885	5.0	5945	3.4	1700	4.7	5020	------	------
23,	5.4	7145	3.4	1700	4.3	3885	5.1	6250	3.4	1700	4.6	4735	------	------
24,	7.0	12500	3.4	1700	4.5	4450	5.2	6550	3.4	1700	4.4	4170	------	------
25,	7.1	12825	3.6	2115	4.3	3885	4.8	5325	3.4	1700	4.2	3600	------	------
26,	6.8	11800	3.6	2115	4.2	3600	4.6	4735	3.4	1700	4.2	3600	------	------
27,	6.0	9045	3.7	2335	4.2	3600	4.3	3885	3.6	2115	4.0	3050	------	------
28,	5.6	7750	3.7	2335	6.6	11100	4.2	3600	4.2	3600	3.8	2555	------	------
29,	5.4	7145	------	------	10.0	23650	4.1	3315	4.3	3885	3.8	2555	------	------
30,	5.0	5945	------	------	9.0	19650	4.1	3315	4.0	3050	3.7	2335	------	------
31,	4.8	5325	------	------	11.0	28100	------	------	3.6	2115	------	------	------	------

Station discontinued July 14, 1906 to January 7, 1907.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF JUNIATA RIVER, AT NEWPORT, PERRY COUNTY, PENNA.

1907.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	*26000	4.15	3455	7.65	‡3050	4.75	5170	4.50	4450	3.80	2555	4.40	4170	3.00	980	3.00	980	3.50	1900	3.20	1320	4.20	3600
2,	------	*13000	4.10	3315	7.85	‡3050	4.50	4450	4.50	4450	4.55	4590	4.25	3740	3.10	1145	3.00	980	3.50	1900	3.10	1145	4.05	3180
3,	------	*9900	4.35	4025	8.00	‡3050	4.50	4450	4.40	4170	6.95	12325	4.15	3455	3.10	1145	2.90	825	3.30	1505	4.75	5170	4.00	3050
4,	----	*9000	4.40	4170	8.15	‡3050	4.40	4170	4.30	3885	7.00	12500	3.90	2800	2.95	903	3.20	1320	3.40	1700	5.50	7445	3.90	2800
5,	----	*9000	4.20	3600	8.20	‡3050	4.40	4170	4.30	3885	6.00	9045	3.75	2445	3.00	980	4.50	4450	3.50	1900	4.75	5170	3.85	2675
6	-----	*7000	4.05	3180	7.90	‡3050	4.30	3885	4.40	4170	5.70	8065	3.70	2335	3.10	1145	4.00	3050	3.55	2005	4.45	4210	3.70	2335
7,	5.10	6250	3.90	2800	7.50	*3050	4.25	3740	4.45	4310	5.65	7905	3.50	1900	3.00	980	4.00	3050	3.60	2115	4.30	3885	3.70	2335
8	4.95	5790	3.90	2800	7.15	*3050	4.20	3600	4.60	4735	5.10	6250	3.65	2225	3.10	1145	3.70	2335	3.50	1900	4.65	4875	3.55	2005
9,	5.05	6100	3.70	2335	6.10	‡3050	4.70	5020	5.55	7595	4.75	5170	3.60	2115	3.10	1145	3.40	1700	3.40	1700	4.80	5325	3.65	2225
10,	4.95	5790	3.90	2800	5.15	‡3050	6.45	10575	7.60	14500	4.55	4590	3.50	1900	3.05	1063	3.60	2115	3.40	1700	4.70	5020	6.15	9535
11,	4.80	5325	4.00	3050	5.60	‡3050	6.25	9875	7.40	13800	4.40	4170	3.50	1900	3.20	1320	5.00	5945	3.40	1700	4.60	4735	9.30	20810
12,	4.85	5480	4.05	3180	5.10	‡3050	5.70	8065	6.50	10750	4.40	4170	3.60	2115	3.35	1600	5.65	7905	3.40	1700	4.15	3455	8.55	17875
13,	6.85	11975	3.90	2800	5.30	‡3050	5.50	7445	5.65	7905	4.85	5480	3.50	1900	3.15	1230	4.95	5790	3.30	1505	4.10	3315	6.70	11450
14,	9.75	22600	3.85	2675	18.00	66100	5.15	6400	5.15	6400	5.45	7295	3.60	2115	3.15	1230	4.35	4025	3.20	1320	3.90	2800	5.60	7750
15,	11.40	29900	4.00	3050	22.10	92815	4.95	5790	4.95	5790	6.75	11625	3.50	1900	3.10	1145	3.85	2675	3.20	1320	3.80	2555	5.35	7000
16,	11.05	28325	4.10	3315	15.65	51840	4.80	5325	4.70	5020	6.75	11625	3.40	1700	2.95	903	3.70	2335	3.20	1320	3.70	2335	5.05	6100
17,	8.55	17880	3.85	2675	12.00	32650	4.60	4735	4.55	4590	5.65	7905	3.40	1700	3.00	980	3.50	1900	3.10	1145	3.70	2335	4.60	4735
18,	7.30	13475	4.00	3050	11.10	28550	4.50	4450	4.40	4170	5.00	5945	3.40	1700	3.00	980	3.40	1700	3.10	1145	3.50	1900	4.50	4450
19,	6.90	12150	4.00	3050	10.90	27650	4.45	4310	4.25	3740	4.60	4735	3.75	2445	2.80	680	3.50	1900	3.10	1145	3.50	1900	4.35	4025
20,	7.95	15725	4.00	3050	14.60	45770	4.40	4170	4.10	3315	4.35	4025	3.95	2925	2.95	903	3.55	2005	3.10	1145	3.60	2115	4.15	3455
21,	9.25	20615	3.95	2925	15.15	48900	4.40	4170	4.05	3180	4.30	3885	3.60	2115	2.90	825	3.45	1800	3.10	1145	3.80	2555	4.00	3050
22,	8.65	18265	4.00	3050	10.70	26775	4.40	4170	3.95	2925	4.20	3600	3.40	1700	2.75	625	3.60	2115	3.00	980	3.90	2800	4.00	3050
23	7.00	12500	7.80	†2550	8.85	19050	4.30	3885	3.85	2675	4.00	3050	3.50	1900	2.90	825	3.85	2675	3.10	1145	3.90	2800	4.30	3885
24,	6.00	9045	7.40	†2550	8.35	17125	4.55	4590	3.80	2555	4.30	3885	3.30	1505	3.10	1145	4.05	3180	3.10	1145	3.90	2800	6.15	9535
25	5.60	7750	7.70	†2550	6.90	12160	5.25	6700	3.80	2555	4.30	3885	3.10	1145	3.20	1320	3.90	2800	3.10	1145	4.15	3455	8.20	16600
26,	5.35	7000	7.25	†2550	6.30	10050	5.60	7750	3.80	2555	4.15	3455	3.20	1320	3.60	2115	3.85	2675	3.00	980	4.50	4450	8.05	16075
27,	5.05	6100	7.40	†2550	5.65	7905	5.30	6550	3.90	2800	3.95	2925	3.20	1320	3.50	1900	3.60	2115	3.00	980	4.60	4735	7.80	15200
28,	4.50	4450	7.45	†2550	5.70	8065	5.05	6100	3.90	2800	3.85	2675	3.10	1145	3.35	1600	3.50	1900	3.25	1410	4.45	4310	7.10	12825
29,	4.15	3455	------	------	5.55	7595	4.80	5325	3.90	2800	3.70	2335	3.20	1320	3.25	1410	3.50	1900	3.40	1700	4.30	3885	6.50	10750
30,	4.15	3455	------	------	5.20	6550	4.60	4735	3.90	2800	3.80	2555	3.20	1320	3.20	1320	3.40	1700	3.65	2225	4.25	3740	6.60	11100
31,	4.25	3740	------	------	4.95	5790	------	------	3.75	2445	------	------	3.10	1145	3.00	980	------	------	3.45	1800	------	------	7.15	12990

*Estimated from Huntingdon.
†Ice affected gage. Assume average discharge 2,550 sec.-ft.
‡Ice affected gage. Assume average discharge 3,050 sec.-ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF JUNIATA RIVER, AT NEWPORT, PERRY COUNTY, PENNA.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.70	11450	3.70	2335	4.50	4450	5.75	8225	4.35	4025	6.25	9875	3.25	1410	3.30	1505	2.90	825	3.50	1900	3.00	980	3.00	980
2,	6.00	9045	3.50	1900	4.45	4310	5.70	8065	4.55	4590	5.55	7595	3.35	1600	3.15	1230	3.00	980	3.20	1320	3.05	1065	2.85	750
3,	5.50	7445	4.75	5170	4.55	4590	5.75	8225	4.40	4170	5.05	6100	3.50	1900	3.10	1145	2.90	825	3.05	1065	3.00	980	3.10	1145
4	5.15	6400	4.85	5480	5.30	6850	5.80	8385	4.35	4025	4.70	5020	3.50	1900	3.05	1065	2.80	680	3.00	980	3.00	980	3.00	980
5,	4.85	5480	4.80	5325	5.70	8065	5.55	7595	4.25	3740	4.50	4450	3.60	2115	3.00	980	2.80	680	3.00	980	3.00	980	3.00	980
6,	4.70	5020	4.60	4735	5.70	8065	5.35	7000	4.35	4025	4.40	4170	3.85	2675	3.10	1145	2.90	825	3.00	980	2.90	825	2.90	825
7,	4.30	3885	4.50	4450	9.30	20810	5.20	6550	5.90	8710	4.20	3600	3.40	1700	3.10	1145	2.80	680	2.95	900	2.90	825	2.85	750
8,	4.10	3315	4.40	4170	12.50	35025	5.00	5945	12.85	36675	4.05	3180	3.30	1505	3.10	1145	2.85	750	2.90	825	2.90	825	2.90	825
9	4.00	3050	4.90	5635	12.75	36210	5.25	6700	12.15	33365	4.00	3050	3.25	1410	3.10	1145	2.70	570	3.00	980	2.85	750	3.05	1065
10,	4.10	3315	5.20	6550	11.80	31750	6.10	9370	9.10	23225	4.05	3180	3.10	1145	3.10	1145	2.75	625	3.00	980	3.00	980	3.25	1410
11	3.95	2975	5.00	5945	9.90	23225	5.85	8545	7.75	15025	4.05	3180	3.10	1145	3.10	1145	2.75	625	3.00	980	2.80	680	3.10	1145
12.	5.05	6100	5.05	6100	10.70	26775	5.70	8065	6.60	11100	4.00	3050	3.10	1145	3.10	1145	2.90	825	2.95	900	3.00	980	3.50	1900
13,	11.15	28775	4.95	5790	11.70	31285	5.55	7595	5.90	8710	3.85	2675	3.10	1145	3.10	1145	2.90	825	3.00	980	3.00	980	3.40	1700
14.	11.45	30130	5.20	6550	12.50	35025	5.25	6700	5.40	7145	3.80	2555	3.20	1320	3.00	980	2.90	825	3.00	980	2.90	825	3.00	980
15,	8.55	17875	6.90	12150	12.25	33835	5.05	6100	5.25	6700	3.80	2555	3.25	1410	3.00	980	2.80	680	3.05	1065	3.00	980	3.00	980
16,	7.00	12500	13.90	41925	12.30	34075	5.10	6250	5.45	7295	3.75	2445	3.45	1800	3.00	980	2.80	680	2.90	825	2.90	825	3.10	1145
17	6.05	9205	10.90	27650	11.20	29000	5.00	5945	6.15	9535	3.85	2675	3.30	1505	2.95	900	2.80	680	2.90	825	2.80	680	3.00	980
18	5.55	7595	7.55	14325	9.65	22200	4.75	5170	6.65	11275	3.80	2555	3.20	1320	3.05	1065	2.80	680	2.90	825	2.80	680	3.20	1320
19,	5.10	6250	6.20	9700	17.45	62700	4.85	5480	6.00	9045	3.70	2335	3.10	1145	3.10	1145	2.75	625	2.85	750	3.00	980	3.75	2445
20	4.85	5480	5.55	7595	*19.60	76700	5.50	7445	15.60	51550	3.60	2115	3.10	1145	3.05	1065	2.80	680	2.95	900	2.90	825	4.25	3740
21,	4.70	5020	5.25	6700	13.15	38075	5.60	7750	13.75	41135	3.60	2115	3.10	1145	3.00	980	2.70	570	2.85	750	3.05	1065	4.15	3455
22,	4.65	4875	4.80	5325	9.70	22400	5.25	6700	10.90	27650	3.50	1900	3.25	1410	3.10	1145	2.80	680	2.85	750	3.00	980	3.75	2445
23,	5.00	5945	4.60	4735	8.25	16775	4.90	5635	12.00	32650	3.50	1900	3.30	1505	3.10	1145	2.80	680	2.90	825	3.00	980	3.40	1700
24.	5.35	7000	4.50	4450	7.45	13975	4.70	5020	9.25	20615	3.50	1900	3.20	1320	3.10	1145	2.80	680	2.85	750	2.95	900	3.30	1505
25	5.05	6100	4.45	4310	7.05	12665	4.60	4735	7.60	14500	3.55	2005	3.75	2445	3.05	1065	2.90	825	3.00	980	2.80	680	3.05	1065
26.	4.70	5020	5.10	6250	6.75	11625	4.50	4450	6.70	11450	3.60	2115	3.55	2005	3.10	1145	2.80	680	3.20	1320	2.90	825	3.15	1230
27	4.70	5020	9.30	20810	6.20	9700	4.50	4450	8.15	16425	3.45	1800	5.50	7445	3.05	1065	2.85	750	3.15	1235	3.00	980	3.10	1145
28.	5.00	5945	5.60	7750	6.10	9370	4.75	5170	7.00	12500	3.40	1700	4.25	3740	2.90	825	2.80	680	3.20	1320	3.00	980	3.25	1410
29,	4.70	5020	4.65	4875	6.10	9370	4.40	4170	5.85	8545	3.25	1410	3.75	2445	2.90	825	3.45	1800	3.15	1230	2.85	750	3.20	1320
30,	4.40	4170	------	------	6.25	9875	4.20	3600	5.75	8225	3.25	1410	3.50	1900	3.00	980	3.70	2335	3.10	1145	2.90	825	3.10	1145
31,	4.10	3315	------	------	5.95	8880	------	------	6.40	10400	------	------	3.40	1700	3.00	980	------	------	3.10	1145	------	------	3.10	1145

Note.—*Maximum 20.75 during night of March 19=84075 sec.-ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF JUNIATA RIVER, AT NEWPORT, PERRY COUNTY, PENNA.

1909. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.05	1060	3.80	2555	5.90	8710	4.10	3315	8.10	16250	3.51	1920	3.68	2290	2.90	825	2.70	570	2.70	570	2.92	855	2.70	570
2,	3.10	1145	3.35	1600	5.35	6995	4.00	3050	7.80	15200	3.49	1880	3.54	1985	2.92	855	2.86	765	2.75	625	2.99	965	2.74	615
3,	3.15	1235	3.30	1505	5.10	6250	4.00	3050	7.00	12500	3.47	1840	3.38	1660	2.94	885	2.85	750	2.74	615	2.82	710	2.70	570
4,	3.20	1320	3.35	1600	5.30	6850	3.90	2800	6.65	11275	3.52	1945	3.22	1355	2.80	680	2.72	590	2.76	635	2.92	855	2.76	635
5,	3.10	1145	3.60	2115	5.25	6700	3.85	2675	6.30	10050	4.00	3050	3.18	1285	2.82	710	2.86	765	2.75	625	2.79	670	2.76	635
6,	3.80	2555	3.85	2675	5.15	6400	3.90	2800	5.85	8545	4.60	4735	3.08	1110	2.86	765	2.80	680	2.74	615	2.84	740	2.70	570
7,	4.50	4450	4.10	3315	5.00	5945	4.00	3050	5.45	7295	4.56	4620	3.05	1060	2.80	680	2.84	740	2.75	625	2.88	795	2.78	660
8,	3.80	2555	3.85	2675	5.05	6095	4.00	3050	5.15	6400	4.32	3940	3.09	1130	2.78	660	2.70	570	2.74	615	2.76	635	2.74	615
9,	3.60	2115	3.60	2115	5.15	6400	4.10	3315	4.85	5480	4.60	4735	3.10	1145	2.78	660	2.86	765	2.74	615	2.91	840	2.72	590
10	3.35	1600	3.85	2675	5.15	6400	4.00	3050	4.60	4735	5.05	6095	2.99	965	2.82	710	2.92	855	2.70	570	2.75	625	2.60	470
11	3.35	1600	4.60	4735	5.40	7145	4.05	3180	4.75	5170	5.32	6910	2.96	920	2.72	590	2.92	855	2.72	590	2.96	920	2.81	695
12,	3.50	1900	4.40	4170	5.30	6850	4.00	3050	4.65	4875	5.79	8355	2.98	950	2.82	710	2.93	870	3.15	1235	2.78	660	2.92	855
13,	3.40	1700	4.25	3740	4.95	5790	4.00	3050	4.30	3885	5.96	8910	3.04	1045	2.78	660	2.85	750	3.00	980	2.79	670	3.10	1145
14,	3.05	1060	4.30	3885	4.75	5170	5.35	6995	4.27	3800	5.29	6820	2.96	920	2.78	660	2.90	825	3.06	1080	2.78	660	4.82	5385
15,	3.00	980	4.50	4450	4.60	4735	†10.75	26985	4.14	3430	4.95	5790	2.98	950	2.69	560	2.75	625	3.05	1060	2.75	625	4.92	5695
16,	3.60	2115	5.80	8385	4.60	4735	9.15	20225	4.13	3400	4.56	4620	3.00	980	2.66	530	2.91	840	3.02	1015	2.92	855	4.38	4115
17,	3.15	1235	7.30	13475	4.40	4170	7.10	12825	3.98	3000	4.32	3940	3.17	1265	3.05	1060	2.89	810	3.00	980	2.77	645	3.88	2750
18,	3.10	1145	6.90	12150	4.20	3600	6.25	9875	3.89	2775	5.26	6730	3.10	1145	3.50	1900	2.80	680	2.92	855	2.86	765	3.38	1660
19,	3.55	2005	6.00	9045	4.20	3600	5.55	7595	3.82	2605	4.90	5635	3.08	1110	3.50	1900	2.82	710	2.98	950	2.82	710	2.90	825
20,	3.25	1410	5.70	8065	4.00	3050	5.20	6550	3.78	2510	4.33	3970	3.01	995	3.18	1285	2.76	635	2.78	660	2.85	750	3.19	1300
21,	3.60	2115	5.55	7595	4.00	3050	6.05	9205	3.74	2425	4.08	3260	3.00	980	3.05	1060	2.85	750	2.90	825	2.72	590	3.28	1470
22,	3.65	2225	5.10	6250	4.00	3050	7.25	13310	3.80	2555	3.92	2850	2.90	825	2.98	950	2.72	590	2.90	825	2.84	740	3.40	1700
23,	3.60	2115	4.95	5790	3.90	2800	8.45	17490	3.96	2950	3.82	2605	2.98	950	2.94	885	2.82	710	2.86	765	2.82	710	3.58	2070
24,	3.60	2115	8.80	18850	3.90	2800	8.25	16775	3.92	2850	3.78	2510	3.00	980	2.95	900	2.82	710	3.11	1160	2.71	580	3.71	2355
25	4.10	3315	*11.95	32425	3.80	2555	7.20	13150	3.79	2535	3.72	2380	3.00	980	2.78	660	2.75	625	3.16	1250	2.76	635	3.72	2380
26,	8.00	15900	9.70	22400	4.15	3455	6.60	11100	3.72	2380	3.71	2355	3.46	1820	2.88	795	2.86	765	3.16	1250	2.72	590	3.78	2510
27,	5.95	8875	7.55	14325	4.50	4450	6.05	9205	3.68	2290	3.68	2290	2.94	885	2.76	635	2.95	900	3.22	1355	2.75	625	3.58	2070
28,	4.95	5790	6.55	10925	4.30	3885	5.55	7595	3.72	2380	3.92	2850	2.98	950	2.76	635	2.94	885	3.22	1355	2.74	615	3.50	1900
29,	4.45	4310	------	------	4.30	3885	5.20	6550	3.78	2510	3.82	2605	2.90	825	2.86	765	2.70	570	3.10	1145	2.76	635	3.45	1800
30,	4.05	3180	------	------	4.10	3315	6.05	9205	3.76	2465	3.70	2335	2.89	810	2.85	750	2.76	635	3.02	1015	2.77	645	3.50	1900
31,	4.00	3050	------	------	4.15	3455	------	------	3.66	2245	------	------	2.89	810	2.87	780	------	------	2.98	950	------	------	3.45	1800

*Maximum 12.2 feet at 8 A. M.=33600 sec.-ft.
†Maximum 11.3 feet at 5 P. M.=29450 sec.-ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF JUNIATA RIVER, AT NEWPORT, PERRY COUNTY, PENNA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.38	1661	3.70	2335	13.05	37592	3.56	2029	5.90	8710	3.70	2335	3.78	2511	2.84	738	3.02	1013	3.55	2005	2.91	840	3.15	1235
2,	3.30	1505	3.60	2115	13.45	39562	3.56	2029	5.45	7295	3.70	2335	3.62	2159	2.84	738	3.10	1145	3.28	1468	2.78	658	3.12	1180
3,	3.28	1468	3.52	1963	13.30	38810	3.55	2005	5.05	6095	4.10	3315	3.50	1900	2.78	658	3.12	1180	3.15	1235	2.98	949	3.10	1145
4,	3.30	1505	3.60	2115	11.20	29000	3.45	1800	4.85	5480	4.35	4028	3.48	1860	2.80	680	3.25	1410	3.10	1145	2.80	680	3.00	980
5,	3.30	1505	3.60	2115	9.40	21200	3.45	1800	4.60	4735	4.05	3180	3.40	1700	2.79	669	3.50	1900	3.00	980	2.82	709	3.08	1112
6,	3.88	2751	3.75	2445	8.40	17300	3.50	1900	4.40	4170	4.60	4735	3.35	1600	2.82	709	3.85	2675	2.90	825	2.88	796	3.05	1060
7,	4.00	3050	3.00	980	8.20	16600	3.60	2115	4.22	3657	4.85	5480	3.36	1622	2.82	709	3.85	2675	2.80	680	2.84	738	3.02	1013
8,	5.05	6095	3.45	1800	8.00	15900	3.50	1900	4.20	3600	4.60	4735	3.41	1729	2.85	752	3.72	2379	2.80	680	2.85	750	3.30	1505
9	5.78	8321	3.59	2094	7.00	12500	3.40	1700	4.15	3455	4.45	4310	3.32	1544	2.88	796	3.50	1900	3.00	980	2.76	636	3.30	1505
10,	5.40	7145	3.66	2247	6.10	9370	3.40	1700	4.55	4502	4.40	4170	3.31	1525	2.88	796	3.40	1700	3.00	980	2.84	738	3.30	1505
11,	4.65	4875	3.91	2825	5.55	7595	3.35	1600	4.40	4170	5.45	7295	3.28	1468	3.02	1013	3.28	1468	3.00	980	2.85	750	3.20	1320
12,	4.35	4028	3.82	2604	5.15	6400	3.24	1394	4.15	3455	7.65	14675	3.20	1320	3.05	1060	3.45	1800	2.80	680	2.90	825	3.30	1505
13.	4.05	3180	3.66	2247	4.88	5573	3.22	1257	4.02	3103	7.95	15725	3.15	1235	3.02	1013	3.50	1900	2.80	680	2.90	825	3.35	1602
14.	3.92	2850	3.54	1986	4.70	5020	3.21	1338	3.95	2925	6.85	11975	3.10	1145	2.92	856	3.50	1900	2.80	680	2.82	709	3.15	1235
15,	4.20	2600	3.45	1800	4.60	4735	3.14	1215	3.90	2800	5.95	8875	3.10	1145	2.90	825	3.68	2291	2.80	680	2.78	658	3.20	1320
16.	4.10	3315	3.40	1700	4.40	4170	3.10	1145	3.82	2604	5.60	7750	3.00	980	2.91	840	3.70	2335	2.82	709	2.75	625	3.12	1180
17,	3.95	2925	4.02	3103	4.40	4170	3.20	1320	3.60	2115	7.50	14150	3.15	1235	2.78	658	3.40	1700	2.72	592	2.98	949	3.15	1235
18,	3.95	2925	7.59	14465	4.20	3600	4.00	3050	3.66	2247	7.25	13310	3.20	1320	2.88	796	3.22	1357	2.85	750	2.80	680	3.15	1235
19,	4.00	3050	6.00	9045	4.12	3372	6.30	10050	3.55	2005	6.50	10750	3.08	1112	2.89	810	3.12	1180	2.78	658	2.79	669	3.15	1235
20.	3.95	2925	5.04	6067	4.10	3315	6.95	12325	3.50	1900	5.60	7750	3.16	1252	2.99	965	3.09	1128	2.90	825	2.78	658	3.22	1357
21,	6.60	11100	4.80	5325	3.98	3000	7.00	12500	3.52	1963	5.40	7145	3.10	1145	3.50	1900	3.10	1145	2.82	709	2.76	636	3.08	1112
22,	*13.57	40192	5.98	8978	4.05	3180	6.42	10470	3.70	2335	4.95	5790	3.05	1060	3.05	1060	2.99	965	2.88	796	2.76	686	3.02	1013
23.	10.20	24570	8.48	17608	4.02	3109	5.78	8321	3.65	2225	4.65	4875	3.02	1013	3.02	1013	3.02	1013	3.02	1013	2.82	709	3.20	1320
24,	6.45	10575	7.78	15130	3.98	3000	7.00	12500	3.80	2555	4.55	4592	3.00	980	2.95	905	3.01	996	3.18	1285	2.85	750	3.32	1544
25,	5.25	6700	5.74	8193	3.95	2925	11.85	31975	4.42	4226	4.30	3887	3.00	980	2.95	905	3.00	980	3.15	1235	2.78	658	3.30	1505
26	4.58	4678	5.17	6460	3.90	2800	13.07	37592	4.75	5170	4.05	3180	3.00	980	2.80	680	3.09	1128	3.02	1013	2.75	625	3.40	1700
27,	4.42	4226	5.18	6490	3.78	2511	10.55	26138	4.55	4592	3.92	2857	2.92	856	2.80	680	3.58	2072	3.02	1013	2.82	709	3.32	1544
28,	4.05	3180	†9.30	20810	3.79	2533	8.55	17880	4.25	3740	3.90	2800	3.08	1112	2.77	625	3.55	2005	2.92	856	2.90	825	3.22	1357
29,	3.98	3000	------	------	3.72	2379	7.10	12825	4.30	3885	4.00	3050	3.00	980	2.75	625	3.68	2291	2.98	949	3.02	1013	3.30	1505
30,	4.00	3050	------	------	3.08	2291	6.40	10400	4.00	3050	3.85	2675	2.88	796	2.82	709	3.70	2335	2.98	949	2.82	709	3.50	1900
31,	3.89	2775	------	------	3.62	2159	------	------	3.70	2335	------	------	2.95	902	2.75	625	------	------	2.90	825	------	------	3.60	2115

*Maximum 17.4 feet=62400 sec.-ft.

†Maximum 10.9 feet=27650 sec.-ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF JUNIATA RIVER, AT NEWPORT, PERRY COUNTY, PENNA.

1911. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.85	2675	5.60	7750	4.45	4310	4.90	5635	4.75	5170	3.57	2050	3.50	1900	2.81	695	7.39	13770	5.04	6065	4.18	3545	3.98	3000
2,	4.20	3600	5.10	6250	4.40	4170	4.75	5170	4.70	5020	3.35	1600	3.40	1700	2.89	810	7.16	13020	6.24	9840	4.08	3260	3.95	2925
3,	4.50	4450	4.50	4450	4.35	4030	4.55	4590	4.73	5110	3.30	1505	3.15	1235	3.05	1060	5.49	7415	§7.34	13605	4.03	3130	3.83	2630
4,	*6.65	11275	4.40	4170	4.35	4050	4.55	4590	4.45	4310	3.40	1700	3.07	1095	3.23	1375	4.89	5605	5.64	7875	3.98	3000	3.83	2630
5,	7.15	12990	4.20	3600	4.20	3600	5.10	6250	4.42	4225	3.40	1700	3.10	1145	3.05	1060	4.19	3570	5.14	6370	3.83	2630	3.78	2510
6,	6.65	11275	4.25	3740	4.00	3050	6.60	11100	4.20	3600	3.35	1600	3.05	1060	3.30	1505	4.29	3860	4.79	5295	3.88	2750	3.85	2675
7	6.15	9535	4.05	3180	3.90	2800	7.40	13800	4.07	3235	3.65	2225	3.05	1060	3.07	1095	4.04	3155	4.94	5760	4.18	3545	3.68	2290
8,	5.70	8065	3.80	2555	3.93	2875	6.95	12325	4.03	3130	3.60	2115	3.17	1270	3.17	1270	4.02	3105	5.64	7895	4.63	4820	3.75	2445
9,	5.30	6850	4.00	3050	3.88	2750	6.25	9875	3.97	2975	3.43	1760	3.17	1270	3.07	1095	4.39	4145	5.16	6430	4.43	4255	3.62	2160
10,	5.00	5945	3.82	2605	3.85	2675	5.80	8385	3.95	2925	3.48	1860	3.15	1235	3.05	1060	7.14	12955	4.84	5450	4.35	4030	3.70	2335
11,	4.95	5790	3.90	2800	4.07	3235	5.65	7910	3.93	2875	3.43	1760	3.03	1030	2.97	935	6.09	9340	4.69	4990	4.23	3685	3.70	2335
12,	4.35	4050	2.72	2380	4.50	4450	5.40	7145	3.80	2555	3.48	1860	3.00	980	2.85	750	5.49	7415	4.54	4565	4.23	3685	3.72	2380
13,	4.70	5020	3.80	2555	4.73	5110	5.20	6550	3.75	2445	3.40	1700	3.05	1060	2.93	870	4.79	5295	4.39	4145	4.23	3685	3.64	2205
14,	9.43	21320	4.10	3315	4.82	5385	5.00	5945	3.70	2335	3.67	2270	3.03	1030	2.87	780	4.39	4145	4.24	3715	4.28	3830	3.72	2380
15,	†10.40	25500	4.60	4735	4.65	4875	5.40	7145	3.70	2335	3.72	2380	3.00	980	2.84	735	4.89	5605	4.16	3485	4.18	3545	3.83	2630
16,	8.75	18655	5.70	8065	4.50	4450	5.50	7445	3.55	2005	3.53	1965	3.00	980	2.90	825	‖9.46	21440	4.06	3210	4.13	3400	4.48	4395
17,	6.50	10750	5.45	7295	4.50	4450	5.30	6850	3.51	1920	3.45	1800	2.93	870	2.90	825	8.79	18810	4.02	3105	4.13	3400	6.05	9205
18,	5.45	7295	5.50	7445	4.43	4255	5.05	6095	3.51	1920	3.33	1565	3.03	1030	2.79	670	7.14	12955	4.42	4225	4.33	3970	6.90	12150
19,	5.00	5945	6.10	9370	4.40	4170	4.90	5635	3.53	1965	3.20	1320	2.97	935	2.77	645	5.74	8195	4.24	3715	4.73	5110	6.00	9045
20,	4.50	4450	5.85	8545	4.27	3800	5.45	7295	3.45	1800	3.28	1470	2.95	900	2.87	780	5.19	6520	5.19	6520	4.91	5065	5.38	7085
21,	4.40	4170	5.60	7750	4.40	4170	7.00	12500	3.47	1840	3.20	1320	2.90	825	2.80	680	4.72	5080	5.06	6130	4.73	5110	5.02	6005
22	4.30	3885	5.10	6250	4.45	4310	6.60	11100	3.41	1720	3.23	1375	2.85	750	2.80	680	4.49	4420	4.84	5450	4.58	4680	4.80	5325
23,	4.10	3315	4.75	5170	4.33	3970	6.75	11625	3.27	1450	3.27	1450	2.87	780	2.77	645	4.29	3860	5.09	6220	4.48	4395	5.12	6310
24,	4.05	3180	4.70	5020	4.28	3830	7.20	13150	3.53	1965	3.27	1450	2.90	825	2.79	670	4.09	3290	5.39	7115	4.38	4115	5.42	7205
25,	3.85	2675	4.35	4030	4.15	3455	7.00	12500	3.57	2050	3.22	1355	2.90	825	3.06	1080	4.14	3430	5.14	6370	4.38	4115	5.45	7295
26	3.80	2555	4.40	4170	4.05	3180	6.50	10750	3.47	1840	3.15	1235	2.97	935	3.25	1410	3.84	2655	4.89	5005	4.33	3970	5.25	6700
27,	3.75	2445	4.50	4450	4.40	4170	5.95	8875	3.33	1565	3.50	1900	2.93	870	3.40	1700	3.89	2775	4.66	4905	4.15	3455	5.70	8065
28,	3.65	2225	4.55	4590	5.40	7145	5.50	7445	3.27	1450	3.47	1840	2.85	750	3.33	1565	3.74	2425	4.54	4565	4.21	3630	6.65	11275
29,	4.20	3600	------	------	5.60	7750	5.15	6400	3.15	1235	3.60	2115	2.93	870	4.07	3235	5.14	6370	4.29	3860	4.03	3130	5.70	8065
30,	4.30	3885	------	------	5.30	6850	4.85	5480	3.25	1410	3.58	2070	2.80	680	4.65	4875	5.14	6370	4.29	3860	4.03	3130	5.70	8065
31,	4.85	5480	------	------	5.15	6400	------	------	3.17	1265	------	------	2.70	605	‡6.25	9875	------	----	4.24	3715	------	------	5.40	7145

*Ice moved and gorged one-quarter mile below. Moved 6 A. M. on 14th.
†10.7 feet at 8 A. M.=26775 sec.-ft.
‡7.05 feet at 5 P. M.=12660 sec.-ft.
‖10.34 feet at 5 P. M.=25250 sec.-ft.
§7.84 feet at 8 A. M.=15340 sec.-ft.

ESTIMATED MONTHLY DISCHARGE OF JUNIATA RIVER, AT NEWPORT, PERRY COUNTY.

(Drainage area, 3380 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1899.					
March (21-31),	25035	6250	11294	3.341	1.366
April,	15200	1700	5492	1.625	1.813
May,	15900	1145	3791	1.122	1.294
June,	2115	380	836	0.247	0.276
July,	1505	380	948	0.280	0.323
August,	5945	825	1521	0.450	0.519
September,	5325	1145	1721	0.509	0.568
October,	1320	570	843	0.249	0.287
November,	5635	570	2032	0.601	0.671
December,	8385	1145	3479	1.029	1.186
1900.					
January,	26350	1900	6057	1.792	2.066
February,	31285	1700	7820	2.314	2.409
March,	36900	3315	7937	2.348	2.707
April,	5020	3050	4197	1.242	1.386
May,	3315	1320	2138	0.633	0.730
June,	2335	1320	1613	0.477	0.532
July,	1505	825	1079	0.319	0.368
August,	2335	680	1018	0.301	0.347
September,	1505	680	780	0.231	0.258
October,	2335	680	1043	0.309	0.356
November,	30820	825	3204	0.948	1.058
December,	12500	1320	3374	0.998	1.151
The year,	36900	680	3355	0.993	13.368
1901.					
January,	3315	1145	2077	0.615	0.709
February,	3885	1505	2489	0.736	0.766
March,	53275	1900	10710	3.169	3.654
April,	41400	5635	14164	4.190	4.676
May,	38810	3050	11155	3.300	3.805
June,	18850	3050	6169	1.825	2.037
July,	6550	1505	2686	0.795	0.917
August,	9700	1145	3646	1.085	1.251
September,	7145	1320	2943	0.871	0.972
October,	2115	980	1370	0.405	0.467
November,	5635	980	1576	0.466	0.520
December,	66100	1900	12294	3.637	4.193
The year,	66100	980	5940	1.758	23.967
1902.					
January,	21600	1900	6228	1.843	2.125
February,	47450	2115	7749	2.293	2.387
March,	113555	3600	22780	6.740	7.771
April,	69410	2555	13252	3.921	4.376
May,	3050	1320	2050	0.607	0.700
June,	5020	1145	1815	0.537	0.599
July,	11450	1900	4283	1.267	1.461
August,	5020	825	2266	0.670	0.773
September,	3600	680	1083	0.320	0.357
October,	10400	1320	3402	1.007	1.161
November,	3050	1320	1748	0.517	0.577
December,	27200	2115	8741	2.586	2.982
The year,	113555	680	6283	1.859	25.260

ESTIMATED MONTHLY DISCHARGE OF JUNIATA RIVER, AT NEWPORT, PERRY COUNTY.

(Drainage area, 3380 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1903.					
January,	24570	2555	6853	2.027	2.337
February,	45210	5945	13224	3.912	4.072
March,	50975	4450	13003	3.847	4.436
April,	51550	3315	11760	3.479	3.883
May,	3315	1700	2236	0.662	0.763
June,	9045	1505	4002	1.184	1.321
July,	21600	1900	6245	1.848	2.131
August,	1590	1505	2767	0.819	0.944
September,	9370	1700	3783	1.119	1.249
October,	7145	1505	2726	0.807	0.930
November,	2335	1505	1691	0.500	0.558
December,	3600	1145	1983	0.587	0.677
The year,	51550	1145	5856	1.733	23.301
1904.					
January,	28100	2335	4957	1.467	1.691
February,	30360	2800	7920	2.343	2.527
March,	42450	4450	12321	3.645	4.203
April,	39300	3050	8519	2.520	2.812
May,	11450	3600	5430	1.607	1.853
June,	9045	1900	4894	1.448	1.616
July,	18460	1505	4380	1.296	1.494
August,	2800	980	1418	0.419	0.483
September,	980	825	923	0.273	0.304
October,	1505	825	910	0.269	0.310
November,	825	380	709	0.209	0.233
December,	2555	380	1323	0.391	0.451
The year,	42450	380	4475	1.324	17.977
a1905.					
January,	-----------	2050	3599	1.065	1.228
February,	5020	2315	3874	1.146	1.193
March,	33600	3885	12352	3.654	4.213
April,	6550	2555	3896	1.153	1.278
May,	5020	1900	2577	0.762	0.879
June,	10050	2115	3746	1.108	1.237
July,	2335	1505	2046	0.605	0.698
August,	23650	1320	4576	1.354	1.561
September,	5635	470	2278	0.674	0.752
October,	5635	980	2914	0.862	0.994
November,	7750	1320	2129	0.630	0.703
December,	14500	2555	6409	1.896	2.186
The year,	33600	470	4200	1.242	16.931
b 1906.					
January,	14150	4735	7733	2.285	2.634
February,	2800	1700	2194	0.649	0.676
March,	28100	2335	7037	2.082	2.400
April,	23650	3315	13028	3.854	4.301
May,	3885	1700	2545	0.753	0.868
June,	12150	1505	3535	1.046	1.167
c1907.					
January,	29900	3455	11517	3.407	3.928
February,	-----------	2335	2988	0.884	0.920
March,	92815	5790	17903	5.297	6.107
April,	10575	3600	5469	1.618	1.806
May,	14500	2445	4894	1.448	1.669
June,	12500	2335	5741	1.700	1.897
July,	4170	1145	2046	0.605	0.698
August,	2115	625	1150	0.340	0.392
September,	5945	825	2661	0.787	0.878
October,	2225	980	1498	0.443	0.510
November,	7445	1145	3555	1.052	1.173
December,	20810	2005	7627	2.255	2.600
The year,	92815	625	5587	1.053	22.578

a Ice gorge January 7-27, causing backwater. Discharge estimated.

b Station discontinued July 14, 1906 to January 7, 1907.

c January 1-6, discharge estimated from Huntingdon. February 23-28, ice affected gage. Discharge assumed 2550 sec.-ft. March 1-13, ice affected gage. Discharge assumed 3050 sec.-ft.

ESTIMATED MONTHLY DISCHARGE OF JUNIATA RIVER, AT NEWPORT, PERRY COUNTY.

(Drainage area, 3380 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square Mile.	Depth in inches.
1908.					
January,	30130	2925	8197	2.425	2.796
February,	41925	1900	8575	2.537	2.735
March,	84075	4310	22505	6.657	7.675
April,	9370	3600	6501	1.923	2.140
May,	51550	3740	15098	4.467	5.150
June,	9875	1410	3154	0.933	1.041
July,	7445	1145	1855	0.549	0.633
August,	1505	825	1081	0.316	0.364
September,	2335	570	808	0.237	0.264
October,	1900	750	1013	0.300	0.346
November,	1065	680	886	0.262	0.292
December,	3740	750	1407	0.416	0.480
The year,	84075	570	5924	1.757	23.922
1909.					
January,	15900	980	2817	0.833	0.960
February,	33600	1505	7625	2.256	2.349
March,	8710	2555	4913	1.454	1.676
April,	29450	2675	8136	2.407	2.686
May,	16250	2245	5186	1.534	1.768
June,	8910	1840	4083	1.208	1.348
July,	2290	810	1132	0.335	0.386
August,	1900	530	842	0.249	0.287
September,	900	570	726	0.215	0.240
October,	1355	570	884	0.261	0.301
November,	965	580	710	0.210	0.234
December,	5695	470	1687	0.499	0.575
The year,	33600	470	3228	.955	12.810
1910.					
January,	62400	1468	5888	1.742	2.008
February,	27670	980	5537	1.638	1.706
March,	39569	2159	10183	3.013	3.474
April,	37590	1145	7812	2.311	2.578
May,	8710	1900	3716	1.099	1.267
June,	15725	2335	6391	1.891	2.110
July,	2511	796	1328	0.393	0.453
August,	1900	625	833	0.246	0.284
September,	2675	980	1666	0.493	0.550
October,	2005	592	931	0.275	0.317
November,	1013	625	737	0.218	0.243
December,	2115	980	1357	0.401	0.462
The year,	62400	592	3865	1.143	15.452
1911.					
January,	26775	2225	7185	2.126	2.451
February,	9370	2225	7185	2.126	2.451
March,	7750	2675	4313	1.276	1.471
April,	13800	4500	8319	2.461	2.746
May,	5170	1235	2569	.760	.876
June,	2380	1235	1744	.516	.576
July,	1900	605	1015	.300	.346
August,	12660	645	1460	.432	.498
September,	25250	2425	6983	2.066	2.305
October,	15340	3105	5627	1.665	1.920
November,	5665	2630	3827	1.132	1.263
December,	12150	2160	5278	1.562	1.801
The year,	26775	605	4441	1.314	17.786

CONODOGUINET CREEK.

DESCRIPTION OF BASIN.

Conodoguinet creek rises in the highlands of the west part of Franklin county, flows northeast through Franklin and Cumberland counties, to join the Susquehanna river opposite Harrisburg. Its course is tortuous and its current slow, and its valley in the lower section is deep and narrow. The total length of the creek is 75 miles and its drainage area 483 square miles. Its tributaries are generally short and unimportant, its watershed area being long and narrow. On the north the basin is bounded by a sandstone ridge, while to the south the valley is composed of rolling limestone hills, highly cultivated. Carlisle and Mechanicsburg, and other smaller boroughs, lie in the valley of this stream; the former obtaining its water supply therefrom, and other towns receiving their supplies from tributaries. It is considerably used for water power by grist mills, and a few small hydro-electric plants.

The mean annual precipitation over this watershed is from 40 to 45 inches.

The discharge has been measured since September 26, 1911, at Bryson's Bridge, 15 miles above the mouth.

SUSQUEHANNA BASIN—STATION NO. 22.

CONODOGUINET CREEK AT BRYSON'S BRIDGE.

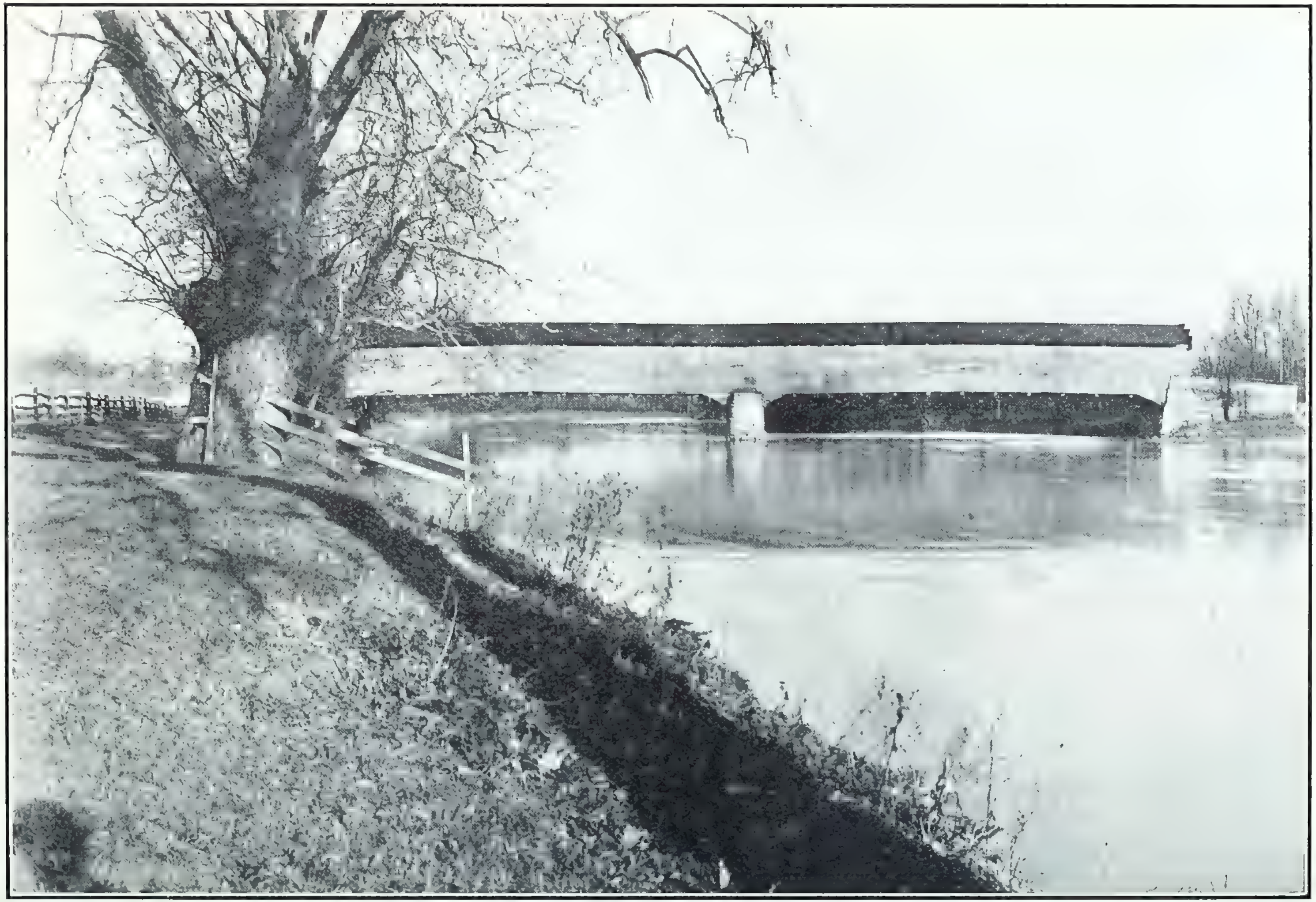
DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania on September 26th, 1911, and is located on a two span, covered, wooden bridge a few miles below Hogestown.

The channel is straight for 300 feet above and 500 feet below the station. There are riffles about 200 feet above the station. The right bank is high, while the left bank is low, but water passes under the bridge at all stages. The bed is of rocks, sand and gravel.

Discharge measurements are taken from the downstream side of the bridge through the floor openings and by wading. The initial point for soundings is top edge of left abutment, downstream side.

A chain gage is attached to the lower chord on the downstream side of the bridge, near the left bank. The length of chain from bottom of weight to marker is 19.0 feet. The elevation of zero is arbi-



Gaging Station on Conodoguinet Creek, near Harrisburg.

trary datum. Bench mark No. 1 is corner of protruding stone, third down from top, at bridge end of left downstream approach wall; elevation, 20.70 feet above gage datum. The gage is read twice daily by Robert D. Hoy.

Since the establishment of this station 13 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF CONODOGUINET CREEK, AT BRYSON'S BRIDGE, CUMBERLAND COUNTY, PENNA.

(Drainage area, 460 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1911.							
1	Oct. 24,	Langenheim & Reckord.	229	603	1.17	4.41	706	
2	Nov. 3,	Langenheim & Reckord.	221	327	1.02	3.22	335	
3	Nov. 27,	Reckord & Boehringer,	219	298	1.02	3.11	304	
4	Jan. 18,	Langenheim & Boehringer.	218	287	0.96	3.0	275	
	1912.							
5	Jan. 3,	Boehringer, ----------	228	436	1.32	3.71	574	
6	Jan. 18,	Langenheim, Boehringer & Reckord.	224	313	1.00	3.56	312	Measurement taken by cutting holes in ice.
7	Feb. 27,	Reckord & Boehringer,	242	1423	3.41	7.96	4859	
8	Feb. 28,	do.	242	871	2.20	5.60	1915	
9	Feb. 28,	do.	242	773	2.07	5.14	1601	
10	June 27,	Reckord, ------------	232	451	1.26	3.71	568	
11	July 1,	Reckord & Hinkley, --	220	282	0.80	2.99	225	Wading msmt. under bridge. Integration.
12	Sept. 25,	Reckord, ------------	236	1833	3.48	9.49	6385	Surface msmt.
13	Sept. 26,	Reckord & Warlow, --	233	1202	2.22	6.90	2672	Surface msmt.

DISCHARGE TABLE FOR CONODOGUINET CREEK AT BRYSON'S BRIDGE, CUMBERLAND COUNTY, FROM SEPTEMBER 26, 1911, TO DECEMBER 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
2.70	215	.20	830	.70	1850	.20	3270	.70	5370
.80	232	.30	890	.80	1930	.30	3390	.80	5540
.90	252	.40	950	.90	2010	.40	3510	.90	5710
3.00	275	.50	1010	6.00	2090	.50	3640	9.00	5880
.10	300	.60	1070	.10	2170	.60	3770	.10	6060
.20	330	.70	1130	.20	2260	.70	3900	.20	6240
.30	365	.80	1200	.30	2350	.80	4030	.30	6420
.40	405	.90	1270	.40	2450	.90	4160	.40	6610
.50	450	5.00	1340	.50	2550	8.00	4300	.50	6800
.60	495	.10	1410	.60	2650	.10	4450	.60	7000
.70	545	.20	1480	.70	2750	.20	4600	.70	7200
.80	600	.30	1550	.80	2850	.30	4750	.80	7410
.90	655	.40	1620	.90	2950	.40	4900	.90	7630
4.00	710	.50	1690	7.00	3050	.50	5050	10.00	7850
.10	770	.60	1770	.10	3160	.60	5210		

DAILY MEAN GAGE HEIGHTS AND DISCHARGE OF CONODOGUINET CREEK, AT BRYSON'S BRIDGE, CUMBERLAND COUNTY, PENNA.

1911. Day.	SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	4.65	1100	3.35	385	3.08	295
2,	------	------	4.40	950	3.28	358	3.02	280
3,	------	------	4.20	830	3.22	337	3.12	306
4,	------	------	3.95	682	3.12	306	3.12	306
5,	------	------	3.88	644	3.05	288	3.00	275
6,	------	------	3.65	520	3.05	288	2.92	257
7,	------	------	3.65	520	3.95	682	3.00	275
8,	------	------	3.68	535	3.95	682	3.02	280
9,	------	------	3.48	441	3.72	556	3.02	280
10,	------	------	3.35	385	3.55	472	3.12	306
11,	------	------	3.35	385	3.50	450	3.02	280
12,	------	------	3.30	365	3.45	428	3.02	280
13,	------	------	3.22	337	3.50	450	2.98	270
14.	------	------	3.12	306	3.32	373	3.02	280
15.	------	------	3.18	324	3.40	405	3.25	348
16,	------	------	3.08	295	3.40	405	4.72	1140
17	------	------	3.08	295	3.30	365	5.98	2070
18,	------	------	5.12	1420	3.50	450	5.30	1550
19,	------	------	5.72	1870	3.92	666	4.42	962
20,	------	------	4.82	1210	3.70	545	4.02	722
21,	------	------	4.38	938	3.55	472	3.78	589
22,	------	------	4.08	758	3.48	441	3.78	589
23,	------	------	4.40	950	3.40	405	4.55	1040
24,	------	------	4.38	938	3.40	405	4.75	1160
25,	------	------	4.18	818	3.35	385	4.62	1080
26,	3.45	428	3.98	699	*3.20	330	4.28	878
27,	3.42	414	3.78	589	3.09	298	4.80	1200
28,	3.38	397	3.65	520	3.17	321	4.85	1240
29.	3.68	535	3.58	486	3.19	327	4.65	1100
30,	5.58	1750	3.45	428	3.12	306	4.15	800
31,	------	------	3.38	397	------	------	4.05	740

*Interpolated.

ESTIMATED MONTHLY DISCHARGE OF CONODOGUINET CREEK, AT BRYSON'S BRIDGE, CUMBERLAND COUNTY, PENNA.

(Drainage area, 460 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1911.					
October,	1870	295	675	1.467	1.691
November,	682	288	419	0.911	1.016
December,	2070	257	683	1.485	1.712

SUSQUEHANNA RIVER.

DESCRIPTION OF BASIN.

The Susquehanna river, the largest stream in the state, is formed by the junction of the North and West Branches, at Northumberland, Northumberland county, Penna. The North Branch, together with the section below the junction of the two branches, is now recognized as the Susquehanna river, but for convenience the old nomenclature has been retained.

From Northumberland the river follows a nearly southerly course to its junction with the Juniata River, near Duncannon, Perry county, at which point it cuts through the North Mountain, turning to the southeast, and continuing this course to its mouth in Chesapeake Bay, at Havre-de-Grace, Md. From Northumberland to a point about 12 miles below Columbia the river is wide and shallow, averaging about one mile in width, with a slope of 2.6 feet per mile, breaking through a series of parallel ridges in the upper portion, and crossing the Cumberland Valley in the lower portion. About 23 miles above the Maryland-Pennsylvania state line the stream enters a gorge where it crosses the Piedmont Plateau and becomes a more narrow and rapid stream, with an average fall of 6.1 feet per mile, continuing this character until it leaves the state.

The prominent tributaries are the West Branch and the North Branch, Juniata river, and Penn's, Sherman, Conodoguinet, Swatara, Conestoga, Pequea, Conewago, Codorus and Octoraro Creeks.

The total length of the Susquehanna river from Northumberland to state boundary is 110 miles. The drainage basin of the stream in Pennsylvania is approximately 21,320 square miles, or 47.2 per cent. of the entire area of the state, while the total area tributary at the Pennsylvania-Maryland state line is approximately 27,590 square miles.

The Susquehanna river is not navigable except locally for small, flat bottom boats, adaptable for local trade and pleasure and this only during certain seasons of the year. Canals formerly followed its banks and those of the North and West Branches, Juniata river, and Swatara creek, but they are now abandoned. This entire basin is largely deforested but it is to some extent in process of regrowth.

The streams are subject to sudden rises and to extremely low summer flow. There are few natural lakes or ponds in the Middle and Lower Susquehanna Sub-basins.

The nearly uniform slope which exists from Northumberland to York Haven is broken at the latter point by rapids, and again in the gorge below Columbia. The water power on this stream at present is developed at York Haven and McCall's Ferry.

Some of the tributaries of the West Branch and Juniata river, together with Swatara, Yellow Breeches and Conodoguinet creeks drain limestone areas. The North Branch drains the anthracite coal fields, as do certain of the tributaries of the main stream, among them Mahanoy, Shamokin, Mahantongo and Wiconisco creeks.

The chief municipalities on the main river and its tributaries below Northumberland are Sunbury, Altoona, Hollidaysburg, Tyrone, Huntingdon, Lewistown, Harrisburg, Shamokin, Shenandoah, Lebanon, York, Lancaster and Columbia. The main river, both branches and many of its tributaries are followed by the Pennsylvania Railroad or the Philadelphia and Reading Railroad.

The average annual rainfall over the entire Susquehanna Basin in Pennsylvania is approximately 41.0 inches.

The discharge of the Susquehanna river is being measured at Harrisburg and McCall's Ferry, and its branches at Wilkes-Barre, Danville and Binghamton, on the North Branch; Williamsport and Renovo on the West Branch and Newport on the Juniata river.

SUSQUEHANNA BASIN—STATION NO. 23.

SUSQUEHANNA RIVER AT HARRISBURG, PA.

DESCRIPTION OF STATION.

This station was established in 1890, at the pumping station of the Harrisburg Water Works, located at the foot of North Street, Harrisburg. Readings were taken on this gage until July 18th, 1904, when a standard chain gage was installed on the Walnut street bridge, by the United States Geological Survey. On July 15th, 1906, the United States Weather Bureau took over the maintenance of this station.

The channel is straight above and below the station, divided into two parts at Hargest's Island. The right and left banks are high and not subject to overflow. The bed is of gravel and boulders and is permanent.

Discharge measurements are made from the downstream side of the Walnut Street bridge; initial point for soundings being end post of hand-rail on downstream side at left bank.

From 1890 to July 18th, 1904, the readings were taken in the pump well at the water works, the observations being made by E. Mather. On July 18th, 1904, a standard chain gage was attached to the hand-rail on the upstream side of the Walnut Street bridge, in the first span.

The length of chain from the bottom of the weight to the marker is 39.37 feet. The elevation of zero is the low water mark of 1803 or 289.4 feet above mean sea level. Bench mark No. 1 is top of upstream outer corner of bridge seat on left abutment; elevation, 32.99 feet above gage datum. Since July 15th, 1906, the gage has been observed by E. R. Demain, local forecaster United States Weather Bureau.

The island, which divides the river into two channels at this point, only overflows at extreme high stages.

Since the establishment of this station 55 discharge measurements have been made.

The following data have been furnished by the United States Geological Survey and the United States Weather Bureau.

DISCHARGE MEASUREMENTS OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

(Drainage area, 23885 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1897.							
1	Mar. 31,	Paul,	------	17048	3.45	5.42	58,859	
2	May 15,	do.	------	24351	4.35	7.83	105,888	
3	Aug. 30,	do.	------	7444	1.29	1.50	9.568	
4	Sept. 16,	do.	------	3756	1.06	0.58	3,962	
5	Nov. 17,	do.	------	9325	1.91	2.50	17,824	

DISCHARGE MEASUREMENTS OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

(Drainage area, 23885 square miles.)

No.	Date.	Hydrographer	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1898.							
6	Feb. 25,	Paul,	------	19420	3.91	6.38	76,250	
7	Mar. 24,	do.	------	43715	5.73	15.55	250,485	
8	Mar. 25,	do.	------	29587	5.06	10.55	149,589	
9	Mar. 26,	do.	------	39725	5.62	14.45	223,374	
10	July 10,	do.	------	4400	1.22	0.83	5,466	
11	Sept. 23,	do.	------	4834	1.44	0.92	6.993	
12	Oct. 7,	do.	------	4459	1.31	0.72	6,121	
	1899.							
13	June 11,	Paul,	------	7656	1.53	1.75	11,746	
14	July 29,	do.	------	4524	1.44	0.91	6,534	
15	Sept. 12,	do.	------	4845	1.12	0.75	5,404	
16	Oct. 25,	do.	------	3699	0.98	0.16	3,625	
	1900.							
17	May 16,	Paul,	------	9404	1.87	2.42	17,621	
18	Sept. 21,	do.	------	3313	0.80	0.08	2 655	
19	Sept. 28	do.	------	3223	0.72	0.04	2,357	
	1901.							
20	Aug. 12,	Paul,	------	9775	2.05	2.70	20,023	
21	Oct. 23,	do.	------	7737	1.62	1.85	12,556	
	1902.							
22	April 17,	Paul,	------	17476	3.46	5.40	60,534	
23	Sept. 15,	do.	------	5023	1.39	1.10	6,982	
	1903.							
24	May 8,	Murphy,	------	9810	1.65	2.30	16,280	
25	June 2,	Hoyt & Holmes,	------	7577	1.11	1.50	8 390	
26	Oct. 5,	Paul & Sawyer,	------	7290	1.25	1.65	9,116	
27	Nov. 2,	Paul,	------	10325	1.96	3.08	20,245	
	1904.							
28	Mar. 9,	Sawyer & Tillinghast,	---	--------	------	15.40	261,860	River running full of ice. Measurement approximate.
29	July 15,	Grover,	------	11870	2.22	3.08	26,408	
30	Sept. 13,	Hoyt,	------	6646	0.90	1.10	5.950	
31	Sept. 29,	do.	------	8730	1.34	1.78	11.660	
32	Oct. 1,	Grover,	------	8460	1.48	1.85	12.560	
33	Nov. 4,	Hoyt & Comstock,	------	8972	1.39	1.82	12,600	
	1905.							
34	Mar. 22,	Follansbee,	2678	44720	6.19	15.72	276,800	
35	Mar. 23,	do.	2678	39940	5.58	13.96	223,000	
36	Mar. 25,	do.	2678	33230	5.34	11.45	177,600	
37	Mar. 26,	Hoyt & Follansbee,	2678	40300	5.98	14.06	240.800	
38	Mar. 27,	Follansbee & Morse,	2678	38430	5.88	13.36	225.900	
39	Mar. 28,	do.	2678	36830	5.70	12.76	209,900	
40	Mar. 28.	do.	2678	36090	5.65	12.50	204,000	
41	Mar. 29	Morse,	2675	32940	5.34	11.37	176.000	
42	Mar. 29,	do.	2675	33610	5.37	11.62	180 600	
43	Mar. 30,	do.	2668	30950	5.11	10.58	158.100	
44	Mar. 31,	do.	2668	27900	4.79	9.44	133,700	
45	Mar. 31,	do.	2668	27190	4.74	9.15	128.900	
46	April 1,	do.	2657	24960	4.47	8.30	111 600	
47	April 4,	Harley,	2602	18380	3.47	5.79	63,790	
48	July 5,	Grover,	2479	9534	1.61	2.39	15,310	
49	July 6,	do.	2571	11230	2.05	2.97	22,980	
	1906.							
50	June 29,	U. S. G. S.,	2500	10100	1.69	2.44	17,100	
	1907.							
51	July 22,	Bolster,	2344	8800	1.40	1.93	12.350	
52	Oct. 10,	Grant,	2539	13701	2.36	3.60	32,249	
	1908.							
53	Mar. 17,	Ryder & Reckord,	2688	42907	6.22	14.64	266,708	
54	Sept. 12,	Reckord,	2317	5602	0.57	0.30	3,217	
	1912.							
55	April 1,	Boehringer & Warlow,	2776	--------	------	12.36	211,988	

DISCHARGE TABLE FOR SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, FROM JANUARY 1, 1891, TO DECEMBER 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
—.04	2330	.10	53400	.40	154570	.70	282050	21.00	437300
—.02	2360	.20	55020	.50	156740	.80	284690	.10	440390
0.00	2395	.30	56660	.60	158920	.90	287340	.20	443480
.10	2610	.40	58320	.70	161110	16.00	290000	.30	446570
.20	2895	.50	60000	.80	163320	.10	292680	.40	449660
.30	3220	.60	61700	.90	165550	.20	295380	.50	452750
.40	3590	.70	63410	11.00	167800	.30	298100	.60	455840
.50	3995	.80	65130	.10	170060	.40	300840	.70	458930
.60	4435	.90	66860	.20	172320	.50	303590	.80	462020
.70	4905	6.00	68600	.30	174580	.60	306350	.90	465110
.80	5410	.10	70350	.40	176840	.70	309120	22.00	468200
.90	5930	.20	72110	.50	179100	.80	311900	.10	471290
1.00	6475	.30	73870	.60	181360	.90	314690	.20	474380
.10	7035	.40	75630	.70	183620	17.00	317500	.30	477470
.20	7625	.50	77400	.80	185880	.10	320330	.40	480570
.30	8230	.60	79200	.90	188140	.20	323180	.50	483670
.40	8900	.70	81020	12.00	190400	.30	326050	.60	486770
.50	9610	.80	82860	.10	192680	.40	328940	.70	489870
.60	10380	.90	84720	.20	194990	.50	331840	.80	492970
.70	11180	7.00	86600	.30	197330	.60	334740	.90	496080
.80	12000	.10	88500	.40	199710	.70	337650	23.00	499200
.90	12835	.20	90400	.50	202110	.80	340560	.10	502330
2.00	13690	.30	92300	.60	204520	.90	343480	.20	505480
.10	14550	.40	94200	.70	206950	18.00	346400	.30	508650
.20	15410	.50	96100	.80	209390	.10	349320	.40	511840
.30	16290	.60	98040	.90	211840	.20	352250	.50	515050
.40	17180	.70	99980	13.00	214300	.30	355180	.60	518270
.50	18100	.80	101920	.10	216770	.40	358120	.70	521500
.60	19030	.90	103860	.20	219240	.50	361070	.80	524730
.70	19980	8.00	105800	.30	221710	.60	364030	.90	527960
.80	20950	.10	107770	.40	224180	.70	367000	24.00	531200
.90	21960	.20	109740	.50	226650	.80	369980	.10	534440
3.00	23000	.30	111710	.60	229120	.90	372980	.20	537680
.10	24150	.40	113680	.70	231590	19.00	376000	.30	540920
.20	25450	.50	115650	.80	234060	.10	379050	.40	544160
.30	26800	.60	117650	.90	236530	.20	382100	.50	547400
.40	28150	.70	119650	14.00	239000	.30	385150	.60	550640
.50	29500	.80	121650	.10	241470	.40	388200	.70	553880
.60	30900	.90	123650	.20	243950	.50	391250	.80	557120
.70	32300	9.00	125650	.30	246430	.60	394300	.90	560360
.80	33750	.10	127660	.40	248920	.70	397350	25.00	563600
.90	35200	.20	129670	.50	251410	.80	400400	.10	566840
4.00	36600	.30	131680	.60	253910	.90	403450	.20	570080
.10	38050	.40	133690	.70	256420	20.00	406300	.30	573320
.20	39500	.50	135700	.80	258940	.10	409560	.40	576560
.30	41000	.60	137720	.90	261470	.20	412630	.50	579800
.40	42550	.70	139760	15.00	264000	.30	415710	.60	583040
.50	44100	.80	141820	.10	266540	.40	418790	.70	586280
.60	45650	.90	143900	.20	269090	.50	421870	.80	589520
.70	47200	10.00	146000	.30	271650	.60	424950	.90	592760
.80	48750	.10	148120	.40	274220	.70	428030	26.00	596000
.90	50250	.20	150260	.50	276810	.80	431120		
5.00	51800	.30	152410	.60	279420	.90	434210		

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1891.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.83	21250	10.38	154140	10.80	163320	8.05	106785	3.58	30620	2.00	13690	2.75	20465	3.25	26125	4.57	45185	1.75	11590	2.50	18100	4.15	38775
2,	3.0	23000	11.30	174580	8.80	121650	8.80	121650	3.50	29500	1.92	13005	2.50	18100	3.17	25060	3.90	35200	1.67	10940	2.50	18100	3.90	35200
3,	3.33	27205	11.30	174580	7.13	89070	8.38	113285	3.42	28420	2.00	13690	2.58	18845	3.08	23920	3.67	31880	1.67	10940	2.33	16555	3.67	31880
4,	4.4	42550	10.97	167125	6.47	76870	8.55	116650	3.42	28420	2.00	13690	3.17	25060	2.92	22170	3.33	27205	1.58	10225	2.25	15850	3.50	29500
5,	5.15	54210	9.97	145370	5.57	61190	8.22	110135	3.25	26125	2.00	13690	3.98	36320	3.00	23000	3.00	23000	1.58	10225	2.25	15850	4.48	43790
6,	4.90	50250	8.72	120050	5.57	61190	7.80	101920	3.08	23920	2.00	13690	3.50	29500	3.08	23920	3.00	23000	1.58	10225	2.25	15850	8.55	116650
7,	5.40	58320	7.47	95530	5.15	54210	6.97	86035	3.00	23000	2.08	14380	3.08	23920	3.00	23000	3.83	34185	1.58	10225	2.17	15150	9.30	131680
8,	5.32	56900	7.30	92300	4.90	50250	6.22	72460	3.00	23000	2.17	15150	2.67	19695	3.33	27205	4.57	45185	1.75	11590	2.17	15150	8.13	108360
9,	4.82	49050	7.30	92300	4.57	45185	5.80	65130	2.92	22168	2.58	18845	2.75	20465	3.08	23920	4.40	42550	2.58	18845	2.00	13690	6.80	82860
10,	4.4	42550	7.22	90780	4.57	45185	5.57	61190	2.75	20465	2.75	20465	2.67	19695	2.83	21250	3.98	36320	3.00	23000	2.00	13690	5.80	65130
11,	3.96	36320	7.30	92300	5.96	67905	5.23	55510	2.67	19695	3.00	23000	2.92	22170	2.75	20465	3.83	34185	2.83	21250	2.00	13690	5.32	56990
12	4.15	38775	7.22	90780	6.88	84350	5.88	66515	2.67	19695	2.75	20465	2.83	21250	2.58	18845	3.50	29500	2.67	19695	2.67	19695	4.90	50250
13,	5.8	65130	6.80	82860	8.30	111710	7.13	89070	2.58	18845	2.67	19695	2.75	20465	2.58	18845	3.08	23920	2.67	19695	3.67	31880	4.07	37615
14,	8.55	116650	6.22	72460	9.47	135095	8.80	121650	2.50	18100	2.67	19695	2.50	18100	2.58	18845	3.00	23000	2.58	18845	3.90	35200	4.23	39950
15,	7.72	100370	5.82	65475	10.55	157830	8.30	111710	2.50	18100	2.58	18844	2.25	15850	2.50	18100	3.00	23000	2.42	17365	4.15	38775	3.90	35200
16,	7.3	92300	5.48	59665	9.80	141820	7.80	101920	2.42	17365	2.50	18100	2.17	15150	2.50	18100	2.67	19695	2.33	16555	3.98	36320	3.83	34185
17,	6.47	76870	5.82	65475	8.63	1182 0	7.47	95530	2.42	17365	2.42	17365	2.00	13690	2.50	18100	2.67	19695	2.08	14380	3.75	33025	3.75	33025
18,	5.8	65130	14.05	240235	7.55	97070	7.22	90780	2.33	16555	2.33	16555	1.83	12250	2.42	17365	2.58	18845	2.00	13690	3.90	35200	3.67	31880
19,	5.57	61190	18.80	369980	6.63	79745	6.63	79745	2.25	15850	2.33	16555	1.92	13005	2.25	15850	2.58	18845	1.83	12250	4.73	47665	4.48	43790
20.	4.98	51490	17.63	335615	5.97	68080	6.55	78300	2.25	15850	2.33	16555	2.08	14380	2.42	17365	2.50	18160	1.92	13005	4.65	46425	4.90	59250
21,	4.73	47665	13.05	215535	5.82	65475	6.13	70880	2.04	14035	3.33	27205	2.08	14380	2.25	15850	2.25	15850	2.17	15150	4.57	45185	4.65	46425
22,	4.4	42550	11.55	180230	6.13	70880	5.82	65475	2.00	13690	3.58	30620	2.08	14380	2.08	14380	2.17	15150	2.50	18100	4.15	38775	4.07	37615
23,	6.88	84350	11.30	174580	6.47	76870	5.40	58320	2.13	14810	5.32	56990	2.00	13690	2.00	13690	2.08	14380	3.25	26125	4.07	37615	3.83	34185
24,	8.97	125050	10.05	147060	7.88	103470	5.07	52920	2.25	15850	5.97	68080	2.00	13690	3.08	23920	2.08	14380	4.57	45185	3.98	36320	3.92	35480
25,	9.30	131680	8.80	121650	10.13	148760	4.90	50250	2.33	16555	5.48	59665	4.23	39950	6.30	73870	2.00	13690	4.07	37615	5.32	56990	4.48	43790
26,	9.22	130070	8.05	106785	10.63	159575	4.65	46425	2.29	16200	4.48	43790	3.90	35200	6.38	75270	1.92	13005	3.67	31880	6.22	72460	6.13	70880
27,	8.22	110135	11.13	170740	9.88	143485	4.57	45185	2.25	15850	4.23	39950	3.83	34185	5.15	54210	1.83	12250	3.17	25060	5.97	68080	8.05	106785
28,	7.30	92300	12.88	211350	8.72	120050	4.15	38775	2.21	15500	3.75	33025	3.33	27205	5.57	61190	1.75	11590	3.00	23000	5.32	56990	9.13	128265
29,	6.80	82860	------	------	7.63	98620	3.98	36320	2.17	15150	3.50	29500	3.00	23000	5.80	65130	1.75	11590	2.83	21250	4.90	50250	8.38	113285
30,	6.88	84350	------	------	7.30	92300	3.83	34185	2.08	14380	3.50	29500	2.75	20465	5.23	55510	1.75	11590	2.67	19695	4.57	45185	7.63	98620
31,	9.63	138330	------	------	7.47	95530	------	------	2.00	13690	------	------	3.92	35480	5.07	52920	------	------	2.58	18845	------	------	8.30	111710

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1892. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	8.30	111710	2.83	21250	4.40	42550	9.55	136710	3.00	23000	5.82	65475	4.57	45185	1.92	13005	2.92	22170	1.08	6920	.50	3995	1.92	13005
2,	8.05	106785	2.92	22170	3.90	35200	8.80	121650	2.83	21250	5.40	58320	4.23	39950	2.00	13690	2.50	18100	1.25	7925	.50	3995	1.83	12250
3,	8.55	116650	2.92	22170	3.58	30620	8.30	111710	2.83	21250	5.07	52920	3.75	33025	1.83	12250	2.33	16555	1.42	9040	.50	3995	1.75	11590
4,	9.13	128265	3.08	23920	3.25	26125	11.55	180230	2.83	21250	7.38	93820	3.67	31880	2.00	13690	2.17	15150	1.25	7925	.50	3995	1.58	10225
5,	8.63	118250	3.08	23920	3.00	23000	14.13	242215	4.40	42550	12.30	197330	3.50	29500	3.00	23000	2.00	13690	1.08	6920	.50	3995	1.58	10225
6,	7.80	101920	3.00	23000	2.67	19695	14.47	250665	5.73	63925	11.80	185880	3.58	30620	2.83	21250	1.83	12250	1.08	6920	.50	3995	1.50	9610
7,	7.63	98620	3.00	23000	2.83	21250	12.97	213560	7.38	93820	11.05	168930	3.42	28420	2.83	21250	1.83	12250	1.00	6475	.50	3995	1.50	9610
8,	6.63	79745	2.92	22170	2.83	21250	11.13	170740	7.38	93820	8.80	121650	3.42	28420	3.00	23000	1.75	11590	1.00	6475	.50	3995	1.50	9610
9,	5.23	55510	2.75	20465	3.83	34185	9.30	131680	7.63	98620	7.47	95530	3.42	28420	2.67	19695	1.67	10940	1.00	6475	.75	5155	1.58	10225
10.	5.57	61190	2.50	18100	5.15	54210	7.63	98620	6.47	76870	6.80	82860	3.00	23000	2.42	17365	1.50	9610	1.00	6475	.92	6040	1.67	10940
11,	4.07	37615	2.58	18845	5.97	68080	6.80	82860	5.48	59665	7.22	90780	2.83	21250	2.17	15150	1.50	9610	1.00	6475	1.00	6475	2.42	17365
12,	3.67	31880	2.50	18100	5.82	65475	6.22	72460	4.90	50250	6.80	82860	2.50	18100	2.08	14380	1.42	9040	.92	6040	1.17	7445	4.15	38775
13,	3.75	33025	2.00	13690	5.57	61190	5.57	61190	4.65	46425	6.22	72460	2.17	15150	2.42	17365	1.42	9040	.92	6040	1.17	7445	3.90	35200
14,	5.40	58320	1.80	12000	4.90	50250	5.23	55510	4.15	38775	5.32	56990	2.17	15150	2.50	18100	1.50	9610	.83	5565	1.17	7445	3.50	29500
15,	11.63	182040	1.75	11590	4.32	41310	4.65	46425	4.07	37615	4.57	45185	2.33	16555	3.50	29500	2.33	16555	.83	5565	1.25	7925	3.08	23920
16,	12.97	213560	1.83	12250	3.90	35200	4.65	46425	4.07	37615	4.07	37615	2.42	17365	4.07	37615	2.33	16555	.83	5565	1.25	7925	2.83	21250
17,	10.63	159575	1.67	10940	3.50	29500	4.23	39950	4.32	41310	3.75	33025	2.42	17365	3.90	35200	2.08	14380	.83	5565	1.25	7925	2.92	22170
18,	8.88	123250	1.75	11590	3.33	27205	4.23	39950	4.73	47665	3.58	30620	2.25	15850	3.50	29500	1.83	12250	.83	5565	1.25	7925	2.67	19695
19,	7.55	97070	2.00	13690	3.08	23920	3.90	35200	4.82	49050	3.50	29500	2.25	15850	2.83	21250	1.67	10940	.83	5565	1.92	13005	2.58	18845
20,	7.47	95530	2.33	16555	3.00	23000	3.83	34185	5.57	61190	3.50	29500	2.08	14380	2.67	19695	1.50	9610	.83	5565	2.50	18100	2.50	18100
21,	6.80	82860	2.17	15150	2.92	22170	3.67	31880	7.05	87550	3.67	31880	2.00	13690	2.33	16555	1.50	9610	.83	5565	2.50	18100	2.42	17365
22,	5.97	68080	2.50	18100	2.67	19695	3.50	29500	8.05	106785	3.90	35200	1.75	11590	2.17	15150	1.50	9610	.83	5565	2.92	22170	2.08	14380
23,	5.23	55510	2.67	19695	2.50	18100	3.42	28420	8.63	118250	3.67	31880	1.67	10940	1.90	12835	1.33	8430	.83	5565	3.58	30620	1.50	9610
24.	4.65	46425	3.17	25060	2.50	18100	3.50	29500	8.55	116650	3.50	29500	1.67	10940	1.83	12250	1.17	7445	.83	5565	8.33	27205	0.92	6040
25,	4.40	42550	3.50	29500	2.67	19695	3.50	29500	8.05	106785	3.67	31880	1.67	10940	1.92	13005	1.17	7445	.75	5155	2.92	22170	1.08	6920
26,	4.23	39950	4.23	39950	3.50	29500	3.58	30620	7.13	89070	4.07	37615	1.58	10225	2.17	15150	1.25	7925	.58	4345	2.50	18100	2.58	18845
27,	3.58	30620	4.40	42550	4.40	42550	3.58	30620	6.47	76870	3.58	30620	1.50	9610	2.00	13690	1.25	7925	.58	4345	2.08	14380	2.00	13690
28,	2.50	18100	4.73	47665	10.63	159575	3.50	29500	6.30	73870	3.25	26125	1.50	9610	2.00	13690	1.25	7925	.58	4345	2.00	13690	2.25	15850
29,	2.08	14380	4.57	45185	12.80	209390	3.33	27205	6.13	70880	3.50	29500	1.50	9610	2.00	13690	1.08	6920	.58	4345	2.00	13690	2.25	15850
30	2.83	21250	------	------	11.80	185880	3.17	25060	6.88	84350	4.73	47665	1.42	9040	2.25	15850	1.08	6920	.58	4345	1.92	13005	2.25	15850
31,	2.83	21250	------	------	10.38	154140	------	------	6.22	72460	------	------	1.67	10940	3.00	23000	------	------	.50	3995	------	------	2.17	15150

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1893.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.00	13690	2.67	19695	2.58	18845	5.88	68515	4.82	49050	3.67	31880	2.33	16555	.92	6040	3.58	30620	2.00	13690	2.17	15150	3.90	35200
2,	2.50	18100	3.00	23000	2.58	18845	5.80	65130	4.73	47665	3.67	31880	2.17	15150	.82	5565	4.07	37615	2.00	13690	2.17	15150	3.83	34185
3.	2.83	21250	3.90	35200	2.75	20465	6.22	72460	5.40	58320	3.50	29500	2.08	14380	.83	5565	3.92	35480	1.83	12250	2.17	15150	3.67	31880
4,	2.85	21250	4.07	37615	2.75	20465	7 30	92300	6.63	79745	3.58	30620	1.92	13005	.83	5565	3.50	29500	1.67	10940	2.17	15150	3.67	31880
5,	2.75	20465	4.90	50250	2.75	20465	7.72	100370	15.97	289202	3.58	30620	1.92	13005	.75	5155	2.67	19695	1.50	9610	2.33	16555	3.67	31880
6,	2.67	19695	4.98	51490	2.50	18100	8.72	120050	16.30	298100	3.17	25060	1.67	10940	.75	5155	2.25	15850	1.50	9610	3.00	23000	3.50	29500
7.	2.50	18100	4.90	50250	2.50	18100	9.30	131680	14.38	248420	3.00	23000	1.67	10940	.67	4765	2.00	13690	1.42	9040	3.25	26125	3.17	25060
8	2.50	18100	5.23	55510	2.67	19695	8.63	118250	11.80	185880	3.00	23000	1.58	10225	.67	4765	1.75	11540	1.42	9040	2.83	21250	3.00	23000
9,	2.50	18100	5.32	56990	3.08	23920	7.80	101920	9.72	140170	3.00	23000	1.50	9610	.58	4345	1.67	11590	1.42	9040	2.83	21250	3.00	23000
10,	2.50	18100	6.22	72460	6.30	73870	8.22	110135	8.07	106785	2.83	21250	1.50	9610	.58	4345	1.50	9610	1.33	8430	2.50	18100	2.92	22170
11,	2.25	15850	7.55	97070	12.30	197330	9.80	141820	6.80	82860	2.67	19695	1.50	9610	.50	3995	1.50	9610	1.33	8430	2.50	18100	2.83	21250
12,	2.25	15850	11.38	176390	13.63	229860	9.22	130070	5.97	68080	2.58	18845	1.50	9610	.50	3995	1.67	10940	1.33	8430	2.42	17365	2.83	21250
13,	2.08	14380	7.30	92300	14.30	246430	8.22	110135	5.40	58320	2.50	18100	1.50	9610	.42	3670	2.00	13690	1.25	7925	2.33	16555	2.83	21250
14,	2.08	14380	6.30	73870	14.38	248420	7.55	97070	4.90	50250	2.33	16555	1.50	9610	.42	3670	2.00	13690	1.67	10940	2.17	15150	2.50	18100
15,	2.08	14380	5.48	59665	12.80	209390	7.22	90780	4.65	46425	2.08	14380	1.75	11590	.42	3670	1.83	12250	4.57	45185	2.08	14380	2.00	13690
16,	2.00	13690	5.15	54210	12.05	191540	7.88	103470	4.48	43790	2.00	13690	1.83	12250	.33	3330	2.00	13690	5.23	55510	2.00	13690	2.25	15850
17,	2.00	13690	7.55	97070	10.30	152410	8.63	118250	5.82	65475	1.92	13005	1.83	12250	.33	3330	2.50	18100	5.15	54210	1.92	13005	2.42	17365
18,	2.00	13690	6.55	78300	8.63	118250	8.72	120050	8.30	111710	1.83	12250	1.67	10940	.33	3330	2.67	19695	4.15	38775	1.83	12250	5.65	62555
19,	2.00	13690	5.73	63925	7.13	89070	7.55	97070	9.55	136710	1.75	11590	1.67	10940	.33	3330	4.32	41310	3.83	34185	1.75	11590	8.63	118250
20,	2.00	13690	5.23	55510	6.47	76870	6.72	81390	8.80	121650	1.75	11590	1.67	10940	.67	4765	3.67	31880	3.42	28420	1.75	11590	6.88	84350
21,	2.00	13690	4.57	45185	5.82	65475	6.80	82860	7.38	93820	1.75	11590	1.67	10940	.58	4345	3.25	26125	3.00	23000	1.67	10940	5.80	65130
22	2.00	13690	4.15	38775	5.48	59665	9.80	141820	6.80	82860	1.58	10225	1.50	9610	.50	3995	2.83	21250	2.50	18100	1.58	10225	5.82	65475
23,	2.00	13690	3.50	29500	5.57	61190	10.72	161550	6.05	69475	1.58	10225	1.42	9040	.42	3670	2.50	18100	2.50	18100	1.58	10225	4.32	41310
24,	2.00	13690	3.00	23000	6.63	79745	10.30	152410	5.48	59665	1.75	11590	1.33	8430	.42	3670	2.33	16555	2.33	16555	1.67	10940	3.92	35480
25,	2.00	13690	3.00	23000	7.05	87550	8.72	120050	5.32	56990	1.75	11590	1.25	7925	.33	3330	2.33	16555	2.25	15850	1.67	10940	3.83	34185
26,	2.00	13690	3.00	23000	7.55	97070	7.47	95530	4.82	49050	2.00	13690	1.17	7445	.42	3670	2.17	15150	2.25	15850	1.58	10225	3.83	34185
27,	2.00	13690	2.92	22170	9.22	130070	6.63	79745	4.40	42550	2.25	15850	1.08	6920	.50	3995	2.00	13690	2.25	15850	1.58	10225	4.73	47665
28,	2.00	13690	2.75	20465	8.47	115000	5.97	68080	4.23	39950	2.50	18100	1.08	6920	.50	3995	2.00	13690	2.00	13690	1.75	11590	5.82	65475
29,	2.00	13690	-----	-----	7.63	98620	5.57	61190	1.07	27615	2.75	20465	1.83	12250	1.00	6475	2.00	13690	2.00	13690	2.83	21250	5.73	63925
30,	2.33	16555	-----	-----	7.63	98620	5.07	52920	3.92	35480	2.50	18100	.92	6040	3.00	23000	2.00	13690	2.00	13690	3.67	31880	5.07	52920
31,	2.50	18100	-----	-----	6.30	73870	-----	-----	3.67	31880	-----	-----	.92	6040	3.08	23920	-----	-----	2.17	15150	-----	-----	4.57	45185

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1894.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.40	42550	2.41	17270	3.16	24930	3.83	34185	4.48	43790	9.30	131680	2.58	18845	1.08	6920	.33	3330	1.91	12920	4.98	51490	2.41	17270
2,	4.40	42550	2.33	16555	3.33	27205	3.66	31740	4.40	42550	9.46	134805	2.41	17270	1.08	6920	.33	3330	1.83	12250	5.15	54210	2.33	16555
3,	3.90	35200	2.25	15850	3.50	29500	3.50	29500	4.00	37470	8.96	124850	2.33	16555	1.33	8430	.33	3330	1.58	10225	5.31	56825	2.50	18100
4,	3.66	31740	2.10	15065	3.75	33025	3.25	26125	3.83	34185	8.38	113285	2.25	15850	1.50	9610	.33	3330	1.58	10225	7.30	92300	2.91	22065
5,	3.50	29500	2.08	14380	3.98	36320	3.16	24930	3.50	29500	8.21	109935	2.00	13690	1.66	10860	.25	3055	1.41	8970	7.46	95340	3.50	29500
6	3.33	27205	2.00	13690	5.56	61020	3.00	23000	3.16	24930	7.71	100175	2.00	13690	1.58	10225	.25	3055	1.41	8970	7.38	93820	3.58	30620
7.	3.41	28285	2.00	13690	7.46	95340	2.91	22065	3.25	26125	6.55	78300	1.83	12250	1.50	9610	.33	3330	1.33	8430	6.96	85850	3.58	30620
8,	5.06	52760	2.00	13690	11.13	170740	2.83	21250	3.33	27205	5.80	65130	1.83	12250	1.50	9610	.33	3330	1.33	8430	6.80	82860	3.33	27205
9,	5.15	54210	2.08	14380	11.96	189500	2.75	20465	3.50	29500	5.40	58320	1.75	11590	1.08	6920	.41	3630	1.25	7925	6.30	73870	3.00	23000
10,	4.48	43790	3.50	29500	10.63	159575	2.75	20465	3.50	29500	4.90	50250	1.66	10860	1.08	6920	1.00	6475	1.33	8430	5.80	65130	3.00	23000
11,	3.75	33025	4.90	50250	8.30	111710	2.83	21250	3.50	29500	4.56	45030	1.58	10225	1.08	6920	1.91	12920	2.08	14380	5.40	58320	3.33	27205
12,	3.33	27205	5.80	65130	9.63	138330	3.00	23000	3.08	23920	3.90	35200	1.50	9610	1.00	6475	1.50	9610	4.81	48900	5.23	55510	3.90	35200
13,	2.50	18100	5.56	61020	6.96	85850	3.25	26125	2.91	22065	3.75	33025	1.41	8970	1.00	6475	1.33	8430	5.48	59665	4.56	45030	4.23	39950
14,	3.16	24930	4.48	43790	6.80	82860	3.66	31740	2.75	20465	3.66	31740	1.41	8970	1.00	6475	1.25	7925	4.98	51490	4.40	42550	5.65	62555
15,	3.16	24930	4.23	39950	6.21	72285	6.13	70880	2.50	18100	3.66	31740	1.33	8430	1.00	6475	1.25	7925	4.56	45030	3.90	35200	5.96	67905
16,	2.83	21250	3.66	31740	5.73	63925	7.38	93820	2.50	18100	3.58	30620	1.33	8430	1.00	6475	1.16	7390	4.06	37470	3.91	35340	6.13	70880
17,	2.66	19600	3.33	27205	5.40	58320	8.88	123250	2.33	16555	3.41	28285	1.25	7925	1.00	6475	1.08	6920	3.83	34185	3.66	31740	5.65	62555
18,	2.83	21250	3.33	27205	4.98	51490	8.88	123250	2.33	16555	3.16	24930	1.16	7390	1.00	6475	1.08	6920	3.66	31740	3.50	29500	5.06	52760
19,	2.83	21250	3.33	27205	4.73	47665	8.30	111710	2.33	16555	3.00	23000	1.08	6920	.91	5985	2.16	15065	3.41	28285	3.25	26125	4.56	45030
20	3.00	23000	4.06	37470	4.48	43790	7.30	92300	5.23	55510	3.50	29500	1.08	6920	.91	5985	3.98	36320	3.00	23000	3.16	24930	4.23	39950
21.	2.83	21250	5.56	61020	4.40	42550	6.55	78300	16.13	293490	3.41	28285	1.08	6920	.83	5565	4.90	50250	2.75	20465	3.08	23920	3.98	36320
22,	2.83	21250	5.23	55510	4.23	39950	8.30	111710	25.38	575910	3.08	23920	1.08	6920	.83	5565	5.40	58320	2.50	18100	3.25	26125	3.83	34185
23,	2.58	18845	5.06	52760	4.40	42550	9.21	129870	21.21	443790	2.83	21250	1.00	6475	.75	5155	5.56	61020	2.33	16555	3.16	24930	3.58	30620
24,	2.41	17270	4.23	39950	4.56	45030	9.38	133290	15.05	265270	2.50	18100	1.08	6920	.75	5155	4.73	47665	2.16	15065	3.00	23000	3.50	29500
25,	2.41	17270	3.33	27205	5.40	58320	9.71	139965	11.63	182040	2.50	18100	1.25	7925	.75	5155	3.90	35200	2.33	16555	3.00	23000	3.33	27205
26,	2.41	17270	2.91	22065	6.80	82860	8.80	121650	11.13	170740	2.66	19600	1.41	8970	.75	5155	3.41	28285	3.58	30620	2.83	21250	3.08	23920
27,	2.41	17270	2.33	16555	6.13	70880	7.05	87550	11.46	178195	2.58	18845	1.50	9610	.66	4715	3.00	23000	4.65	46425	2.66	19600	3.00	23000
28,	2.50	18100	2.50	18100	5.40	58320	5.80	65130	9.30	131680	2.66	19600	1.50	9610	.66	4715	2.58	18845	4.73	47665	2.58	18845	3.00	23000
29,	2.58	18845	------	------	4.81	48900	5.31	56825	7.71	100175	2.41	17270	1.41	8970	.58	4345	2.25	15850	4.23	39950	2.58	18845	3.90	35200
30,	2.58	18845	------	------	4.23	39950	4.90	50250	6.80	82860	2.75	20465	1.16	7390	.50	3995	2.08	14380	3.90	35200	2.50	18100	3.66	31740
31,	2.50	18100	------	------	3.90	35200	------	------	7.30	92300	------	------	1.08	6920	.41	3630	------	------	3.75	33025	------	------	3.66	31740

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1895.	JAN.		FEB.		MAR.		APR		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.92	35480	2.92	22170	5.80	65130	5.65	62555	3.42	28420	2.67	19695	2.83	21250	.58	4345	.75	5155	.42	3670	.21	2925	3.08	23920
2,	3.90	35200	2.83	21250	8.38	113285	5.57	61190	3.33	27205	2.58	18845	2.67	19695	.67	4765	.75	5155	.42	3670	.21	2925	3.08	23920
3,	4.15	38775	3.00	23000	7.88	103470	5.97	68080	3.25	26125	2.50	18100	2.92	22170	.67	4765	.67	4765	.33	3330	.25	3055	2.75	20465
4,	4.23	39950	3.00	23000	10.30	152410	6.63	79745	3.00	23000	2.25	15850	2.50	18100	.67	4765	.67	4765	.33	3330	.25	3055	2.50	18100
5,	4.23	39950	6.80	82860	7.63	98620	6.47	76870	2.75	20465	2.08	14080	2.25	15850	.58	4345	.58	4345	.33	3330	.33	3330	2.25	15850
6,	4.23	39950	5.57	61190	7.47	95530	5.97	68080	2.67	19695	1.92	13005	2.00	13690	.50	3995	.58	4345	.33	3330	.38	3515	2.00	13690
7,	4.23	39950	5.65	62555	6.47	76870	5.80	65130	2.50	18100	1.83	12250	1.92	13005	.50	3995	.75	5155	.33	3330	.38	3515	1.92	13005
8,	4.40	42550	5.57	61190	6.05	69475	5.65	62555	2.42	17365	1.75	11590	1.75	11590	.83	5565	.75	5155	.25	3055	.42	3670	1.92	13005
9,	4.65	46425	5.40	58320	5.73	63925	7.88	103470	2.25	15850	1.75	11590	1.58	10225	.75	5155	.67	4765	.25	3055	.42	3670	1.92	13005
10,	5.97	68080	5.40	58320	5.97	68080	11.80	185880	2.75	20465	1.58	10225	1.50	9610	1.00	6475	.50	3995	.21	2925	.42	3670	1.83	12250
11,	7.22	90780	5.48	59665	5.97	68080	13.47	225910	3.00	23000	1.33	8430	1.50	9610	1.08	6920	1.00	6475	.21	2925	.42	3670	1.50	9610
12,	7.63	98620	5.82	65475	6.13	70880	12.30	197330	3.33	27205	1.42	9040	1.42	9040	1.08	6920	1.50	9610	.21	2925	.46	3830	1.50	9610
13,	8.30	111710	5.73	63925	5.97	68080	10.72	161550	3.67	31880	1.33	8430	1.33	8430	1.08	6920	1.58	10225	.33	3330	.50	3995	.96	6255
14,	7.63	98620	5.73	63925	5.80	65130	9.30	131680	4.23	39950	1.25	7925	1.33	8430	.92	6040	1.42	9040	.29	3185	.58	4345	.75	5155
15.	6.55	78300	5.57	61190	6.30	73870	9.80	141820	4.23	39950	1.25	7925	1.25	7925	1.33	8430	1.00	6475	.29	3185	.58	4345	1.00	6475
16,	6.05	69475	5.48	59665	6.55	78300	9.55	136710	4.07	37615	1.25	7925	1.25	7925	1.33	8430	.83	5565	.25	3055	.58	4345	1.00	6475
17,	5.65	62555	5.40	58320	6.47	76870	8.55	116650	3.98	36220	1.25	7925	1.08	6920	1.08	6920	.67	4765	.25	3055	.67	4765	1.33	8430
18,	5.32	56990	5.40	58320	6.13	70880	7.38	93820	3.67	31880	1.25	7925	1.00	6475	1.00	6475	.58	4345	.42	3670	.83	5565	1.33	8430
19,	4.90	50250	5.23	55510	5.57	61190	6.47	76870	3.50	29500	1.25	7925	.92	6040	1.00	6475	.67	4765	.58	4345	1.00	6475	1.33	8430
20,	4.40	42550	5.15	54210	5.40	58320	5.80	65130	3.33	27205	1.25	7925	.92	6040	.92	6040	.67	4765	.50	3995	1.00	6475	1.33	8430
21,	4.32	41310	5.07	52920	5.23	55510	5.40	58320	3.17	25060	1.17	7445	.83	5565	.83	5565	.67	4765	.42	3670	.92	6040	1.50	9610
22,	4.23	39950	4.98	51490	5.07	52920	4.90	50250	3.08	23920	1.00	6475	.83	5565	.58	4345	.58	4345	.42	3670	.79	5360	1.83	12250
23,	3.90	35200	4.90	50250	4.90	50250	4.48	43790	2.92	22170	.75	5155	.83	5565	.50	3995	.58	4345	.33	3330	.67	4765	2.00	13690
24,	3.90	35200	4.82	49050	4.90	50250	4.23	39950	2.75	20465	.75	5155	.83	5565	.50	3995	.58	4345	.25	3055	.75	5155	2.67	19695
25,	3.33	27205	4.65	46425	4.90	50250	3.90	35200	2.58	18845	.75	5155	.83	5565	.42	3670	.58	4345	.25	3055	.75	5155	2.75	20465
26,	3.25	26125	4.48	43790	5.73	63925	3.75	33025	2.50	18100	1.50	9610	.83	5565	.33	3330	.50	3995	.21	2925	.75	5155	2.83	21250
27,	3.08	23920	4.40	42550	7.80	101920	3.58	30620	2.50	18100	1.50	9610	.83	5565	.33	3330	.50	3995	.13	2695	.75	5155	3.33	27205
28,	3.08	23920	4.65	46425	8.80	121650	3.75	33025	2.42	17365	1.50	9610	.83	5565	.33	3330	.42	3670	.08	2565	2.67	19695	3.50	29500
29,	3.08	23920	------	------	7.80	101920	3.75	33025	2.42	17365	2.00	13690	.75	5155	.33	3330	.42	3670	.08	2565	2.83	21250	4.98	51490
30,	3.25	26125	------	------	6.97	86035	3.50	29500	3.08	23920	3.50	29500	.58	4345	.33	3330	.42	3670	.04	2480	2.83	21250	5.57	61190
31,	3.00	23000	------	------	6.13	70880	------	------	3.00	23000	------	------	.42	3670	.50	3995	------	------	.04	2480	------	------	5.57	61190

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1896.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	9.72	140170	4.40	42550	6.97	86035	14.38	248420	3.00	23000	1.50	9610	2.67	19695	4.57	45185	.33	3330	5.32	56990	2.08	14380	3.92	35480
2,	8.97	125050	3.75	33025	8.97	125050	14.38	248420	3.00	23000	1.50	9610	2.42	17365	4.23	39950	.33	3330	4.15	38775	1.92	13005	3.92	35480
3,	8.22	110135	3.58	30620	9.55	136710	13.55	227885	2.83	21250	1.75	11590	2.08	14380	3.83	34185	.33	3330	3.90	35200	1.83	12250	3.83	34185
4,	6.30	73870	3.58	30620	8.22	110135	12.13	193570	2.83	21250	1.83	12250	1.83	12250	3.75	33025	.33	3330	3.17	25060	1.83	12250	3.33	27205
5,	4.98	51490	3.50	29500	6.97	86035	10.30	152410	2.67	19695	1.67	10940	1.75	11590	3.67	31880	.25	3055	2.67	19695	1.83	12250	3.00	23000
6,	3.90	35260	3.90	35200	5.40	58320	8.63	118250	2.50	18100	1.67	10940	1.67	10940	3.58	30620	.25	3055	2.08	14380	7.05	87550	2.75	20465
7,	3.83	34185	11.30	174580	4.90	50250	7.05	87550	2.42	17365	1.67	10940	2.17	15150	2.50	18100	.25	3055	1.83	12250	9.88	143485	2.67	19695
8,	3.00	23000	12.30	197330	4.65	46425	6.30	73870	2.17	15150	1.58	10225	2.00	13690	2.33	16555	.25	3055	1.67	10940	7.55	97070	2.50	18100
9.	4.57	45185	10.13	148760	4.40	42550	5.97	68080	2.08	14380	1.42	9040	1.92	13005	2.33	16555	.25	3055	1.50	9610	6.30	73870	2.50	18100
10,	4.23	39950	8.30	111710	4.73	47665	5.73	63925	2.00	13690	1.75	11590	2.33	16555	2.25	15850	.25	3055	1.50	9610	5.57	61190	2.67	19695
11,	3.98	36320	6.63	79745	4.98	51490	5.40	58320	2.00	13690	2.50	18100	2.75	20465	2.25	15850	.25	3055	1.50	9610	4.65	46425	3.42	28420
12,	3.90	35200	5.23	55510	4.57	45185	5.40	58320	1.92	13005	2.58	18845	2.75	20465	2.00	13690	.25	3055	1.50	9610	4.32	41310	3.75	33025
13,	3.92	35480	4.82	49050	3.90	35200	5.80	65130	1.75	11590	3.42	28420	2.50	18100	1.83	12250	.25	3055	1.92	13005	4.07	37615	3.90	35200
14,	3.90	35200	4.15	38775	3.50	29500	6.22	72460	1.67	10940	3.25	26125	2.17	15150	1.67	10940	.33	3330	7.13	89070	3.90	35200	4.15	38775
15,	3.83	34185	3.75	33025	2.67	19695	7.80	101920	1.67	10940	2.92	22170	2.00	13690	1.67	10940	.33	3330	6.80	82860	3.83	34185	3.83	34185
16,	3.83	34185	3.75	33025	2.67	19695	8.22	110135	1.75	11590	2.58	18845	1.83	12250	1.58	10225	.33	3330	9.30	131680	3.67	31880	3.67	31880
17,	3.75	33025	3.83	34185	2.33	16555	7.97	105220	1.58	10225	2.58	18845	1.67	10940	1.58	10225	.50	3995	7.47	95530	3.50	29500	3.42	28420
18,	3.58	30620	3.58	30620	2.50	18100	7.13	89070	1.50	9610	2.83	21250	1.58	10225	1.58	10225	.50	3995	5.48	59665	3.33	27205	3.08	23920
19,	3.67	31880	2.92	22170	3.17	25060	6.63	79745	1.50	9610	2.67	19695	1.67	10940	1.33	8430	.58	4345	4.73	47665	3.17	25060	2.92	22170
20	3.90	35200	3.00	23000	3.90	35200	6.13	70880	1.50	9610	3.00	23000	1.67	10940	1.25	7925	.58	4345	3.98	36320	3.00	23000	2.58	18845
21,	3.67	31880	2.33	16555	5.80	65130	5.65	62555	1.50	9610	3.17	25060	1.92	13005	1.00	6475	.67	4765	3.58	30620	2.83	21250	2.33	16555
22,	3.50	29500	3.67	31880	5.65	62555	5.15	54210	1.42	9040	3.00	23000	1.67	10940	.83	5565	.83	5565	3.42	28420	2.67	19695	2.00	13690
23,	3.50	29500	5.32	56990	5.65	62555	4.73	47665	1.42	9040	2.42	17365	1.58	10225	.83	5565	1.17	7445	3.25	26125	2.58	18845	2.00	13690
24,	3.50	29500	5.32	56990	6.05	69475	4.48	43790	1.42	9040	2.33	16555	1.67	10940	.83	5565	1.17	7445	3.00	23000	2.50	18100	1.50	9610
25,	3.90	35200	3.42	28420	5.48	59665	4.23	39950	1.33	8430	2.25	15850	1.67	10940	.83	5565	.92	6040	3.00	23000	2.50	18100	1.50	9610
26,	7.05	87550	3.50	29500	4.90	50250	3.98	36320	1.25	7925	2.67	19695	1.75	11590	.75	5155	.75	5155	3.00	23000	2.33	16555	1.50	9610
27,	7.13	89070	3.67	31880	5.15	54210	3.90	35200	1.17	7445	4.65	46425	1.92	13005	.75	5155	.58	4345	2.75	20465	2.33	16555	1.50	9610
28,	5.97	68080	3.17	25060	5.88	66515	3.58	30620	1.25	7925	3.90	35200	2.50	18100	.67	4765	.50	3995	2.67	19695	2.42	17365	1.50	9610
29,	5.80	65130	3.17	25060	6.30	73870	3.42	28420	1.50	9610	3.50	29500	2.50	18100	.58	4345	.42	3670	2.50	18100	2.67	19695	1.33	8430
30,	5.65	62555	------	------	9.05	126655	3.25	26125	1.50	9610	3.08	23920	3.75	33025	.50	3995	.83	5565	2.42	17365	3.50	29500	1.58	10225
31,	5.32	56990	------	------	12.30	197330	------	------	1.50	9610	----	-----	4.23	39950	.33	3330	------	------	2.25	15850	------	------	1.75	11590

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1897. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.83	12250	3.33	27205	4.15	38775	4.90	50250	3.08	23920	2.92	22170	1.42	9040	3.90	35200	1.25	7925	1.75	11590	.67	4765	4.90	50250
2,	2.00	13690	3.17	25060	3.67	31880	4.57	45185	3.08	23920	2.83	21250	1.33	8480	4.23	39950	1.08	6920	1.50	9610	1.17	7445	4.40	42550
3,	2.00	13690	3.17	25060	3.25	26125	4.23	39950	5.40	58320	2.67	19695	1.25	7925	3.83	34185	1.00	6475	1.33	8430	3.08	23920	3.90	35200
4,	2.08	14380	3.17	25060	3.83	34185	4.07	37615	6.30	73870	2.58	18845	1.25	7925	3.25	26125	1.00	6475	1.17	7445	3.98	36320	3.75	33025
5,	2.50	18100	3.08	23920	4.82	49050	3.90	35200	7.30	92300	2.67	19695	1.25	7925	2.83	21250	1.00	6475	1.08	6920	3.50	29500	3.33	27205
6,	3.00	23000	3.00	23000	5.82	65475	3.83	34185	6.88	84350	3.00	23000	1.25	7925	2.67	19695	.92	6040	1.00	6475	3.08	23920	4.65	46425
7,	3.67	31880	4.15	38775	7.47	95530	3.75	33025	6.80	82860	2.67	19695	1.42	9040	2.42	17365	.83	5565	1.00	6475	3.00	23000	5.07	52920
8,	3.67	31880	7.30	92300	8.38	113285	3.75	33025	6.13	70880	2.50	18100	1.42	9040	2.67	19695	.83	5565	.92	6040	2.75	20465	4.98	51490
9,	3.67	31880	6.38	75280	7.80	101920	3.75	33025	5.40	58320	2.67	19695	1.25	7925	2.50	18100	.83	5565	.83	5565	2.50	18100	5.32	56990
10,	3.33	27205	5.32	56990	6.72	81390	5.82	65475	4.73	47665	2.67	19695	1.25	7925	2.08	14380	.66	4715	.67	4765	2.41	17270	4.82	49050
11,	3.08	23920	4.73	47665	6.30	73870	8.80	121650	4.40	42550	2.67	19695	1.17	7445	2.08	14380	.58	4345	.67	4765	2.67	19695	4.23	39950
12,	2.83	21250	4.40	42550	7.05	87550	9.30	131680	3.90	35200	2.67	19695	1.08	6920	2.00	13690	.67	4765	.58	4345	2.67	19695	4.07	37615
13,	2.42	17365	3.92	35480	8.47	115060	7.80	101920	3.90	35200	3.08	23920	1.00	6475	1.83	12250	.67	4765	.75	5155	2.50	18100	4.07	37615
14,	2.00	13690	3.83	34185	8.22	110135	6.63	79745	5.80	65130	3.50	29500	1.08	6920	1.75	11590	.67	4765	.75	5155	2.50	18100	4.23	39950
15,	2.00	13690	3.83	34185	7.55	97070	5.80	65130	7.55	97070	3.25	26125	1.00	6475	1.58	10225	.50	3995	.75	5155	2.50	18100	4.48	43790
16,	2.00	13690	3.50	29500	6.80	82800	5.80	65130	7.72	100370	2.92	22170	1.00	6475	1.58	10225	.58	4345	.75	5155	2.50	18100	6.38	75280
17,	2.00	13690	3.50	29500	6.72	81390	6.38	75280	7.13	89070	2.67	19695	1.17	7445	1.50	9610	.67	4765	.67	4765	2.50	18100	7.47	95530
18,	2.17	15150	3.33	27205	5.40	58320	6.80	82860	6.30	73870	2.50	18100	1.17	7445	1.50	9610	.75	5155	.67	4765	2.67	19695	7.97	105220
19	2.33	16555	3.58	30620	4.90	50250	6.38	75280	5.65	62555	2.25	15850	1.08	6920	1.42	9040	.75	5155	.58	4345	2.92	22170	7.13	89070
20,	2.00	13690	3.98	36320	5.23	57510	5.80	65130	4.90	50250	2.17	15150	1.08	6920	1.42	9040	.67	4765	.58	4345	3.42	28420	6.13	70880
21,	1.83	12250	3.90	35200	7.22	90780	5.40	58320	4.15	38775	2.17	15150	1.50	9610	1.33	8430	.58	4345	.50	3995	3.25	26125	5.48	59665
22,	1.83	12250	4.15	38775	8.05	106785	4.82	49050	4.15	38775	2.17	15150	1.50	9610	1.17	7445	.58	4345	.58	4345	3.17	25060	4.90	50250
23,	1.92	13005	5.82	65475	9.55	136710	4.40	42550	3.58	30620	2.00	13690	1.33	8430	1.17	7445	.58	4345	.75	5155	2.83	21250	3.98	36320
24,	1.67	10940	7.72	100370	9.30	131680	4.07	37615	3.50	29500	1.83	12250	1.42	9040	1.25	7925	1.00	6475	.75	5155	2.50	18100	3.83	34185
25.	1.67	10940	7.30	92300	9.97	145370	3.83	34185	3.75	33025	1.75	11590	1.58	10225	1.67	10940	1.50	9610	1.00	6475	2.50	18100	3.42	28420
26,	1.50	9610	6.30	73870	11.30	174580	3.67	31880	3.75	33025	1.75	11590	1.75	11590	2.67	19695	1.50	9610	1.00	6475	2.50	18100	2.83	21250
27,	3.33	27205	5.40	58320	10.47	156090	3.58	30620	3.50	29500	1.67	10940	1.75	11590	2.08	14380	1.83	12250	1.00	6475	2.33	16555	2.75	20465
28,	3.33	27205	4.40	42550	7.80	101920	3.50	29500	3.58	30620	1.58	10225	2.17	15150	1.75	11590	1.92	13005	.92	6040	2.50	18100	2.67	19695
29,	3.00	23000	......	......	7.22	90780	3.33	27205	3.92	35480	1.58	10225	3.83	34185	1.58	10225	2.25	15850	.83	5565	3.50	29500	2.67	19695
30.	3.25	26125	......	......	6.13	70880	3.17	25060	3.50	29500	1.50	9610	4.40	42550	1.50	9610	2.00	13690	.75	5155	4.82	49050	2.58	18845
31,	3.33	27205	......	......	5.48	59665	......	......	3.25	26125	......	......	3.98	36320	1.33	8430	......	......	.75	5155	......	......	2.50	18100

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1898. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.66	19600	3.91	35340	4.56	45030	8.46	114860	5.80	65130	4.23	39950	2.00	13690	1.41	8970	2.66	19600	.75	5155	4.56	45030	3.08	23920
2,	2.33	16555	3.41	28285	4.23	39950	7.21	90590	5.31	56825	4.06	37470	2.16	15065	1.50	9610	2.33	16555	.75	5155	3.90	35200	3.16	24930
3,	2.16	15065	3.00	23000	4.06	37470	6.21	72285	4.73	47665	3.91	35340	2.00	13690	1.41	8970	3.00	23000	.66	4715	3.66	31740	3.08	23920
4,	2.66	19600	2.66	19600	3.91	35340	5.65	62555	4.56	45030	3.58	30620	1.75	11590	2.33	16555	2.50	18100	.66	4715	3.50	29500	3.00	23000
5,	1.91	12920	2.66	19600	3.66	31740	5.31	56825	4.31	41155	3.33	27205	1.66	10860	4.48	43790	2.08	14380	.66	4715	3.16	24930	3.66	31740
6,	1.91	12920	2.66	19600	3.58	30620	4.81	48900	4.33	41465	3.00	23000	1.58	10225	5.23	55510	1.91	12920	.66	4715	3.00	23000	4.90	50250
7,	2.25	15850	2.66	19600	3.50	29500	4.40	42550	4.56	45030	2.83	21250	1.50	9610	3.90	35200	1.66	10860	.66	4715	2.91	22065	4.40	42550
8,	2.50	18100	3.08	23920	3.50	29500	4.31	41155	5.40	58320	2.66	19600	1.41	8970	3.50	29500	1.66	10860	1.00	6475	2.50	18100	3.98	36320
9,	2.66	19600	3.41	28285	3.33	27205	4.06	37470	6.05	69475	2.50	18100	1.33	8430	3.08	23920	1.66	10860	1.33	8430	2.50	18100	3.83	34185
10,	2.75	20465	3.50	29500	3.33	27205	3.83	34185	5.48	59665	2.50	18100	1.25	7925	3.66	31740	2.00	13690	1.41	8970	2.50	18100	3.58	30620
11,	3.00	23000	3.41	28285	3.83	34185	3.66	31740	5.06	52760	2.33	16555	1.16	7390	4.15	38775	2.83	21250	2.25	15850	2.58	18845	3.08	23920
12,	3.00	23000	3.75	33025	4.81	48900	3.50	29500	4.65	46425	2.33	16555	1.08	6920	3.75	33025	2.75	20465	2.40	17180	3.90	35200	2.50	18100
13,	3.33	27205	4.31	41155	6.30	73870	3.33	27205	4.40	42550	2.25	15850	1.00	6475	3.33	27205	2.58	18845	2.33	16555	8.55	116650	2.25	15850
14,	3.90	35200	7.46	95340	8.46	114860	3.25	26125	3.90	35200	2.25	15850	.91	5985	2.66	19600	2.08	14380	2.00	13690	7.80	101920	2.25	15850
15,	6.75	81940	7.96	105025	9.63	138330	3.16	24930	3.90	35200	2.41	17270	.88	5565	2.50	18100	1.91	12920	2.00	13690	6.38	75280	2.08	14380
16,	7.88	103470	7.30	92300	9.13	128265	3.66	31740	4.15	38775	2.75	20465	.83	5565	2.25	15850	1.75	11590	2.08	14380	5.40	58320	2.00	13690
17,	7.63	98620	6.30	73870	7.88	103470	3.98	36320	5.06	52760	3.25	26125	.75	5155	2.00	13690	1.41	8970	2.16	15065	4.73	47665	2.00	13690
18,	7.38	93820	5.73	63925	6.96	85850	3.91	35340	5.88	66515	3.00	23000	.66	4715	1.91	12920	1.33	8430	3.25	26125	4.23	39950	1.91	12920
19,	6.38	75280	4.90	50250	6.13	70880	3.66	31740	5.23	55510	2.66	19600	.66	4715	2.33	16555	1.16	7390	3.75	33025	4.06	37470	2.00	13690
20,	5.73	63925	4.23	39950	5.73	63925	3.50	29500	5.40	58320	2.41	17270	.75	5155	3.00	23000	1.00	6475	3.90	35200	4.06	37470	2.50	18100
21,	5.65	62555	4.56	45030	7.13	89070	3.41	28285	6.46	76690	2.33	16555	.91	5985	4.31	41155	.91	5985	4.23	39950	4.15	38775	2.91	22065
22,	5.96	67905	6.63	79745	9.05	126655	3.33	27205	6.46	76690	2.33	16555	.75	5155	4.23	39950	.91	5985	4.15	38775	4.48	43790	3.08	23920
23,	7.21	90590	6.71	81205	10.71	161330	3.16	24930	6.30	73870	2.08	14380	.91	5985	3.75	33025	.91	5985	7.13	89070	4.73	47665	3.50	29500
24	9.05	126655	7.55	97070	15.43	274995	3.00	23000	5.80	65130	2.00	13690	.83	5565	3.41	28285	.83	5565	8.13	108360	4.56	45030	5.31	56825
25,	10.30	152410	6.46	76690	15.05	265270	3.50	29500	6.80	82860	2.16	15065	.83	5565	3.00	23000	.83	5565	7.21	90590	4.23	39950	7.63	98620
26,	9.30	131680	6.05	69475	11.46	178195	6.46	76690	6.30	73870	2.08	14380	.83	5565	2.66	19600	.75	5155	5.96	67905	3.90	35200	7.46	95340
27,	7.80	101920	5.56	61020	9.05	126655	10.13	148760	6.30	73870	2.00	13690	1.33	8430	2.50	18100	.91	5985	5.56	61020	3.91	35340	6.13	70880
28,	6.80	82860	4.90	50250	7.55	97070	9.30	131688	5.96	67905	1.91	12920	1.16	7390	2.41	17270	.91	5985	5.48	59665	3.66	31740	5.23	55510
29,	5.88	66515	------	------	6.46	76690	7.96	105025	5.65	62555	1.83	12250	1.83	12250	4.06	37470	.75	5155	5.56	61020	3.50	29500	4.73	47665
30,	5.40	58320	------	------	6.80	82860	6.46	76690	5.23	55510	1.66	10860	1.58	10225	3.83	34185	.75	5155	5.88	66515	3.33	27205	4.23	39950
31,	4.73	47665	------	------	8.80	121650	------	------	4.81	48900	------	------	1.33	8430	3.00	23000	------	------	5.23	55510	------	------	3.83	34185

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1899.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.25	26125	2.50	18100	8.21	109935	7.05	87550	3.41	28285	2.50	18100	1.75	11590	.75	5155	1.83	12250	1.08	6920	.50	3995	1.75	11590
2,	3.16	24930	2.00	13690	7.96	105025	6.21	72285	3.08	23920	2.58	18845	1.66	10860	.75	5155	1.50	9610	.83	5565	1.66	10860	1.58	10225
3,	2.75	20465	1.91	12920	7.63	98620	5.73	63925	3.08	23920	2.50	18100	1.66	10860	.75	5155	1.25	7925	.83	5565	2.50	18100	1.50	9610
4,	3.25	26125	2.25	15850	7.21	90590	5.23	55510	3.41	28285	2.50	18100	1.50	9610	.75	5155	1.08	6920	.75	5155	3.25	26125	1.50	9610
5,	3.50	29500	2.58	18845	7.80	101920	4.81	48900	3.16	24930	2.50	18100	1.33	8430	.75	5155	1.08	6920	.66	4715	4.40	42550	1.50	9610
6,	4.90	50250	2.66	19600	12.30	197330	4.31	41155	3.16	24930	2.33	16555	1.25	7925	.91	5985	1.00	6475	.66	4715	3.91	35340	1.50	9610
7,	7.80	101920	2.83	21250	12.80	209390	4.15	38775	3.00	23000	2.08	14380	1.25	7925	.75	5155	.91	5985	.58	4345	3.75	33025	1.50	9610
8,	6.63	79745	2.41	17270	11.21	172545	4.65	46425	2.75	20465	1.91	12920	1.16	7390	.75	5155	.91	5985	.58	4345	3.16	24930	1.50	9610
9,	5.88	66515	2.50	18100	9.05	126655	6.63	79745	2.83	21250	1.91	12920	1.16	7390	.83	5565	.83	5565	.58	4345	2.83	21250	1.50	9610
10,	5.31	56825	2.41	17270	7.46	95340	8.55	116650	2.66	19600	1.91	12920	1.16	7390	.75	5155	1.00	6475	.66	4715	2.50	18100	1.50	9610
11,	4.48	43790	2.41	17270	6.30	73870	8.21	109935	2.75	20465	1.75	11590	1.41	8970	.66	4715	1.00	6475	.58	4345	2.25	15850	1.50	9610
12,	3.90	35200	4.31	41155	5.65	62555	7.55	97070	2.75	20465	1.66	10860	1.25	7925	.66	4715	.75	5155	.58	4345	2.16	15065	1.50	9610
13,	3.33	27205	4.31	41155	5.65	62555	6.55	78300	2.91	22065	1.66	10860	1.16	7390	1.08	6920	.83	5565	.50	3995	2.08	14380	2.75	20465
14,	3.16	24930	4.48	43790	7.30	92300	6.55	78300	2.83	21250	1.58	10225	1.16	7390	1.08	6920	1.41	8970	.50	3995	2.00	13690	5.40	58320
15,	3.33	27205	4.48	43790	8.21	109935	7.80	101920	2.58	18845	1.50	9610	1.16	7390	1.25	7925	1.25	7925	.51	4040	2.25	15850	6.13	70880
16,	3.66	31740	4.56	45030	7.80	101920	7.80	101920	2.50	18100	1.50	9610	1.08	6920	.91	5985	.83	5565	.41	3630	2.41	17270	5.80	65130
17,	4.73	47665	4.73	47665	7.21	90590	7.63	98620	2.50	18100	1.41	8970	1.00	6475	.66	4715	.75	5155	.41	3630	2.41	17270	5.23	55510
18,	6.80	82860	4.73	47665	6.21	72285	7.13	89070	2.58	18845	1.25	7925	1.25	7925	.66	4715	.75	5155	.41	3630	2.41	17270	4.48	43790
19,	6.13	70880	4.81	48900	4.23	39950	6.63	79745	3.75	33025	1.25	7925	1.25	7925	.50	3995	.58	4345	.41	3630	2.83	21250	3.98	36320
20,	5.56	61020	4.65	46425	6.96	85850	5.80	65130	4.65	46425	1.25	7925	1.25	7925	.50	3995	.66	4715	.33	3330	3.00	23000	3.75	33025
21,	4.81	48900	4.81	48900	8.30	111710	5.31	56825	5.06	52760	1.25	7925	1.25	7925	.50	3995	.75	5155	.33	3330	2.91	22065	3.75	33025
22	4.23	39950	5.23	55510	7.96	105025	4.98	51490	4.15	38775	1.16	7390	1.33	8430	.50	3995	.66	4715	.33	3330	2.58	18845	3.83	34185
23,	4.15	38775	7.30	92300	7.30	92300	4.81	48900	3.91	35340	1.08	6920	1.33	8430	.50	3995	.66	4715	.33	3330	2.50	18100	4.40	42550
24,	3.98	36320	7.30	92300	6.96	85850	4.46	42550	3.58	30620	1.00	6475	1.33	8430	.50	3995	.66	4715	.16	2780	2.25	15850	4.15	38775
25,	4.06	37470	6.96	85850	7.21	90590	4.31	41155	3.16	24930	1.41	8970	1.16	7390	.50	3995	.66	4715	.16	2780	2.25	15850	5.73	63925
26,	5.15	54210	6.63	79745	7.21	90590	3.90	35200	3.00	23000	2.00	13690	1.00	6475	.41	3630	.66	4715	.25	3055	2.25	15850	6.55	78300
27,	4.40	42550	7.13	89070	6.63	79745	3.91	35340	2.91	22065	1.66	10860	1.00	6475	.66	4715	1.00	6475	.33	3330	2.16	15065	5.15	54210
28,	3.83	34185	8.80	121650	6.13	70880	3.75	33025	2.66	19600	1.50	9610	1.00	6475	3.90	35200	1.33	8430	.33	3330	2.00	13690	4.48	43790
29,	3.25	26125	------	------	6.63	79745	3.66	31740	2.50	18100	1.50	9610	.91	5985	2.66	19600	1.16	7390	.41	3630	2.00	13690	3.83	34185
30,	3.00	23000	------	------	7.63	98620	3.50	29500	2.50	18100	1.75	11590	.83	5565	2.50	18100	1.08	6920	.33	3330	1.83	12250	3.00	23000
31,	3.00	23000	------	------	7.88	103470	------	------	2.50	18100	------	------	.75	5155	2.16	15065	------	------	.33	3330	------	------	2.25	15850

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1900.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.83	12250	2.91	22065	3.90	35200	4.06	37470	3.90	35200	2.58	18845	1.17	7445	1.25	7925	1.00	6475	.04	2480	.83	5565	6.80	82860
2,	1.66	10860	1.83	12250	12.92	212330	3.90	35200	3.75	33025	2.50	18100	1.08	6920	1.00	6475	1.00	6475	.04	2480	.83	5565	5.73	63925
3,	4.40	42550	3.91	35340	12.13	193370	4.06	37470	3.50	29500	2.33	16555	1.00	6475	1.00	6475	.83	5565	.04	2480	.75	5155	5.15	54210
4,	4.81	48900	3.90	35200	9.30	131680	4.31	41155	3.33	27205	2.17	15150	1.08	6920	.92	6040	1.17	7445	.06	2525	.75	5155	4.40	42550
5.	4.73	47665	4.56	45030	7.71	100175	5.23	55510	3.08	23920	2.50	18100	1.33	8430	.75	5155	.92	6040	.04	2480	.75	5155	4.90	50250
6,	5.15	54210	4.23	39950	6.71	81205	5.90	65130	2.83	21250	2.67	19695	1.17	7445	.67	4765	.83	5565	.04	2480	.66	4715	7.05	87550
7,	5.40	58320	5.40	58320	5.80	65130	5.31	56825	2.83	21250	2.50	18100	1.33	8430	.67	4765	.58	4345	.04	2480	.66	4715	7.21	90590
8,	5.23	55510	4.90	50250	5.96	67905	4.98	51490	2.75	20465	2.17	15150	1.17	7445	.58	4345	.58	4345	.08	2565	.66	4715	6.88	84350
9,	4.81	48900	3.90	35200	6.30	73870	5.96	67905	2.50	18100	2.17	15150	1.42	9040	.50	3995	.58	4345	.04	2480	.75	5155	5.80	65130
10,	4.48	43790	4.73	47665	5.73	63925	6.55	78300	2.50	18100	2.08	14380	1.42	9040	.58	4345	.50	3995	.04	2480	.58	4345	5.15	54210
11,	4.40	42550	5.65	62555	5.56	61020	6.30	73870	2.42	17365	2.00	13690	1.33	8430	.50	3995	.42	3670	.04	2480	.66	4715	4.65	46425
12,	5.40	58320	5.40	58320	6.05	69475	5.48	59665	2.33	16555	2.00	13690	1.17	7445	.33	3330	.33	3330	.04	2480	.50	3995	3.98	36320
13,	4.81	48900	5.56	61020	5.65	62555	4.90	50250	2.42	17365	1.9	13005	1.08	6920	.33	3330	.17	2810	.25	3055	.58	4345	3.83	34185
14,	5.15	54210	7.46	95340	4.56	45030	4.40	42550	2.42	17365	1.92	13005	1.08	6920	.25	3055	.25	3055	.83	5565	.75	5155	3.60	30900
15,	5.15	54210	7.80	101920	4.40	42550	4.23	39950	2.50	18100	2.00	13690	1.00	6475	.17	2810	.25	3055	.83	5565	.66	4715	2.91	22065
16,	5.15	54210	8.05	106785	3.90	35200	4.40	42550	2.40	17180	2.17	15150	1.00	6475	.17	2810	.25	3055	.75	5155	.66	4715	2.85	21455
17,	4.56	45030	7.21	90590	3.66	31740	4.31	41155	2.33	16555	2.17	15150	1.00	6475	.25	3055	.25	3055	.58	4345	.83	5565	2.25	15850
18,	4.90	50250	5.80	65130	3.16	24930	4.23	39950	2.33	16555	2.00	13690	1.08	6920	.17	2810	.17	2810	.66	4715	.91	5985	2.08	14380
19,	4.73	47665	4.65	46425	3.00	23000	4.98	51490	2.25	15850	1.83	12250	.92	6040	.17	2810	.08	2565	.66	4715	.75	5155	2.08	14380
20.	3.90	35200	3.91	35340	3.00	23000	6.88	84370	2.50	18100	1.83	12250	.92	6040	.17	2810	.12	2665	.58	4345	.91	5985	2.08	14380
21,	4.15	38775	2.16	15065	3.91	35340	7.13	89070	2.92	22170	1.82	12165	.83	5565	.33	3330	.08	2565	.50	3995	.91	5985	2.00	13690
22,	10.46	155870	3.58	30620	6.67	80475	6.63	79715	2.17	15150	1.75	11590	.75	5155	.42	3670	.07	2545	.50	3995	.91	5985	2.16	15065
23,	11.80	185880	9.30	131680	6.63	79745	5.88	66515	2.83	21250	1.75	11590	.75	5155	.83	5565	.06	2525	.50	3995	.83	5565	2.41	17270
24,	8.96	124850	10.96	166900	5.80	65130	5.73	63925	2.58	18845	1.58	10225	.75	5155	.50	3995	.04	2480	.50	3995	1.00	6475	2.16	15065
25,	7.05	87550	9.55	136710	5.65	62555	5.80	65130	2.42	17365	1.42	9040	.75	5155	1.25	7925	.04	2480	1.00	6475	1.08	6920	2.33	16555
26,	5.88	66515	6.63	79745	5.73	63925	6.05	69175	2.25	15850	1.33	8430	.83	5565	1.00	6475	.02	2435	1.08	6920	1.66	10860	2.41	17270
27,	4.90	50250	5.40	58320	5.40	58320	5.65	62555	2.17	15150	1.33	8430	1.50	9610	1.17	7445	.00	2395	1.00	6475	5.81	65300	2.00	13690
28,	4.40	42550	4.40	42550	5.15	54210	4.98	51490	2.00	13690	1.33	8430	1.25	7925	1.50	9610	—.04	2330	1.25	7925	12.84	210370	2.66	19600
29,	3.98	36320	------	------	4.73	47665	4.48	43790	2.00	13690	1.33	8430	1.25	7925	1.33	8430	—.04	2330	1.16	7390	12.13	193370	2.91	22065
30,	3.33	27205	------	------	4.40	42550	4.07	37615	2.00	13690	1.17	7445	1.42	9040	1.00	6475	+.04	2480	1.00	6475	8.71	119850	2.58	18845
31,	2.50	18100	------	------	4.31	41155	------	------	1.92	13005	------	------	1.25	7925	1.08	6920	------	------	.91	5985	------	------	2.50	18100

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1901.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.25	15850	2.58	18845	1.75	11590	6.96	85850	5.06	52760	12.38	199235	3.08	23920	1.66	10860	3.50	29500	2.08	14380	1.41	8970	3.08	23920
2,	2.08	14380	3.90	35200	1.66	10860	5.80	65130	4.48	43790	10.21	150475	2.83	21250	1.83	12250	3.75	33025	2.41	17270	1.41	8970	3.00	23000
3,	1.66	10860	3.33	27205	1.75	11590	5.56	61020	4.40	42550	8.71	119850	2.58	18845	1.75	11590	4.65	46425	2.33	16555	1.33	8430	2.75	20465
4,	1.66	10860	3.25	26125	1.83	12250	6.05	69475	4.31	41155	7.63	98620	2.33	16555	1.58	10225	5.06	52760	2.33	16555	1.33	8430	2.75	20465
5,	1.75	11590	3.25	26125	2.33	16555	7.30	92300	5.06	52760	6.96	85850	2.25	15850	1.50	9610	4.73	47665	2.33	16555	1.25	7925	3.08	23920
6,	1.66	10860	3.08	23920	2.50	18100	7.63	98620	4.90	50250	6.13	70880	2.16	15065	1.25	7925	4.06	37470	2.41	17270	1.25	7925	2.66	19600
7,	1.41	8970	3.16	24930	2.58	18845	8.46	114860	4.48	43790	5.40	58320	2.33	16555	1.66	10860	3.58	30620	2.16	15065	1.25	7925	2.75	20465
8,	1.16	7390	3.16	24930	2.50	18100	11.21	172545	3.98	36320	5.40	58320	2.16	15065	2.58	18845	3.16	24930	1.83	12250	1.16	7390	2.25	15850
9,	1.50	9610	3.16	24930	3.00	23000	12.55	203315	3.75	33025	5.80	65130	2.08	14380	2.75	20465	2.83	21250	1.75	11590	1.16	7390	2.16	15065
10,	1.50	9610	3.00	23000	3.25	26125	11.30	174580	3.66	31740	5.65	62555	2.08	14380	2.50	18100	2.50	18100	1.75	11590	1.16	7390	2.58	18845
11,	1.66	10860	2.83	21250	6.21	72285	9.80	141820	3.41	28285	5.40	58320	2.00	13690	2.33	16555	2.50	18100	1.66	10860	1.16	7390	4.40	42550
12,	2.00	13690	2.91	22065	11.55	180230	8.46	114860	3.83	34185	4.90	50250	1.91	12920	2.75	20465	2.33	16555	1.66	10860	1.00	6475	6.80	82860
13,	2.00	13690	2.83	21250	11.63	182040	7.30	92300	4.06	37470	4.56	45030	1.91	12920	2.41	17270	2.41	17270	1.66	10860	1.08	6920	6.80	82860
14,	2.50	18100	2.75	20465	9.13	128265	6.71	81205	4.40	42550	4.15	38775	1.83	12250	2.00	13690	2.33	16555	1.83	12250	1.25	7925	5.96	67905
15,	3.50	29500	2.75	20465	7.30	92300	5.96	67905	5.06	52760	3.91	35340	1.91	12920	1.75	11590	2.33	16555	2.41	17270	1.33	8430	9.05	120655
16,	3.33	27205	2.58	18845	6.46	76690	5.81	65300	4.98	51400	3.50	29500	1.75	11590	1.66	10860	2.25	15850	2.66	19600	1.58	10225	21.21	443790
17,	3.41	28285	2.75	20465	6.05	69475	5.65	62555	4.56	45030	3.75	33025	1.66	10860	1.66	10860	2.41	17270	2.50	18100	1.66	10860	18.38	357530
18,	2.91	22065	2.58	18845	5.65	62555	5.23	55510	4.06	37470	3.58	30620	2.08	14380	1.75	11590	2.41	17270	2.08	14380	1.91	12920	13.96	238010
19,	2.58	18845	2.50	18100	5.15	54210	4.90	50250	3.90	35200	3.50	29500	2.41	17270	5.40	58320	2.50	18100	2.08	14380	1.91	12920	9.63	138330
20,	1.75	11590	2.50	18100	4.90	50250	4.65	46425	4.15	38775	3.25	26125	2.25	15850	5.73	63925	2.66	19600	2.00	13690	1.91	12920	7.21	90590
21,	1.75	11590	2.08	14380	5.81	65300	5.40	58320	3.98	36320	3.08	23920	2.00	13690	4.90	50250	2.58	18845	2.00	13690	1.75	11590	5.96	67905
22,	1.83	12250	2.00	13690	8.30	111710	10.83	163320	3.99	35200	3.25	26125	1.83	12250	3.98	36320	2.58	18845	1.91	12920	1.75	11590	4.73	47665
23,	2.00	13690	2.00	13690	9.30	131680	13.38	223685	5.40	58320	3.75	33025	1.75	11590	4.06	37470	2.41	17270	1.91	12920	1.58	10225	3.83	34185
24,	1.75	11590	1.91	12920	8.88	123250	11.96	189560	8.21	109335	3.83	34185	1.66	10860	4.65	46425	2.33	16555	1.83	12250	1.83	12250	3.58	30620
25,	2.00	13690	1.91	12920	7.80	101920	9.96	145160	7.30	92300	3.90	35200	1.58	10225	7.55	97070	2.08	14380	1.83	12250	2.50	18100	3.75	33025
26,	1.75	11590	1.91	12920	7.46	95340	8.96	124850	7.80	101920	3.91	35340	1.50	9610	8.80	121650	2.00	13690	1.66	10860	3.08	23920	3.75	33025
27,	2.00	13690	1.75	11590	8.13	108360	8.30	111710	7.30	92300	3.75	33025	1.58	10225	7.05	87550	1.83	12250	1.58	10225	5.31	56825	3.91	35340
28,	2.00	13690	1.75	11590	11.55	180230	7.05	87550	6.80	82860	3.50	29500	1.66	10860	5.65	62555	1.75	11590	1.66	10860	5.15	54210	3.91	35340
29,	2.00	13690	......	......	12.71	207190	6.30	73870	8.55	116650	3.25	26125	1.50	9610	4.65	46425	1.66	10860	1.50	9610	3.90	35200	3.91	35340
30,	1.75	11590	......	......	10.96	166900	5.65	62555	12.05	191540	3.16	24930	1.50	9610	3.90	35200	1.66	10860	1.41	8970	3.58	30620	5.48	59665
31,	1.66	10860	......	......	8.80	121650	......	......	13.71	231835	......	......	1.50	9610	3.50	29500	......	......	1.41	8970	......	......	6.05	69475

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1902.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.15	54210	3.58	30620	20.13	410480	6.05	69475	2.75	20465	1.75	11590	3.58	30620	5.73	63925	1.25	7925	4.73	47665	5.40	58320	2.41	17270
2,	4.65	46425	3.66	31740	23.71	521820	5.48	59665	2.83	21250	1.75	11590	5.96	67905	5.23	55510	1.25	7925	5.80	65130	4.65	46425	2.41	17270
3,	4.15	38775	3.50	29500	23.13	503275	5.23	55510	2.83	21250	1.66	10860	7.13	89070	5.40	58320	1.25	7925	5.81	65300	4.40	42550	2.58	18845
4,	3.83	34185	3.25	26125	21.21	443790	4.90	50250	2.66	19600	1.66	10860	6.46	76690	6.05	60475	1.25	7925	5.56	61020	3.90	35200	3.33	27205
5,	3.00	23000	2.41	17270	16.13	293490	4.65	46425	2.66	19600	1.66	10860	7.63	98620	5.40	58320	1.16	7390	4.56	45030	3.50	29500	3.75	33025
6,	3.00	23000	2.00	13690	12.05	191540	4.40	42550	2.83	21250	1.66	1086	7.30	92300	4.73	47665	1.08	6920	4.56	45030	3.50	29500	3.25	26125
7,	3.00	23000	5.88	66515	9.30	131680	4.40	42550	2.75	20465	1.50	961	6.63	79745	4.40	42550	1.00	6475	4.56	45030	3.25	26125	3.50	29500
8,	2.83	21250	5.15	54210	6.80	82860	4.40	42550	2.66	19600	1.25	792	7.13	89070	3.90	35200	.91	5985	4.31	41155	3.08	23920	3.41	28285
9,	2.75	20465	4.90	50250	5.15	54210	8.80	121650	2.66	19600	1.50	9610	8.30	111710	3.58	30620	.91	5985	3.83	34185	2.91	22065	3.41	28285
10,	3.00	23000	4.98	51490	4.90	50250	14.46	250415	2.66	19600	1.58	10225	6.96	85850	3.25	26125	.91	5985	3.83	34185	2.75	20465	3.16	24930
11,	2.91	22065	5.23	55510	6.46	76690	13.96	238015	2.66	19600	1.50	9610	5.96	67905	3.50	29500	.91	5985	3.50	29500	2.66	19600	3.00	23000
12,	2.66	19600	5.06	52760	8.13	108360	11.38	176390	2.50	18100	1.50	9610	5.96	67905	3.58	30620	1.25	7925	3.58	20620	2.41	17270	3.00	23000
13,	2.58	18845	4.73	47665	10.71	161330	10.71	161330	2.41	17270	1.50	9610	6.05	69475	3.25	26125	1.25	7925	4.65	46425	2.41	17270	3.83	34185
14,	2.25	15850	4.31	41155	13.21	219485	7.96	105025	2.33	16555	1.50	9610	5.40	58320	3.08	23920	1.08	6920	4.73	47665	2.33	16555	3.66	31740
15,	2.25	15850	4.31	41155	13.38	223685	6.88	84350	2.25	15850	1.75	11590	4.48	43790	2.83	21250	1.16	7390	3.75	33025	2.33	16555	3.90	35200
16,	2.25	15850	4.15	38775	11.80	185880	6.21	72285	2.16	15065	1.75	11590	3.90	35200	2.75	20465	1.08	6920	3.91	35340	2.25	15850	3.90	35200
17,	2.16	15065	3.98	36320	11.96	189500	5.56	61020	2.16	15065	2.25	15850	3.50	29500	2.50	18100	1.08	6920	3.75	33025	2.16	15065	5.23	55510
18,	2.00	13690	3.83	34185	14.80	258940	4.98	51490	2.00	13690	2.41	17270	3.25	26125	2.50	18100	1.00	6475	3.16	24930	2.16	15065	8.38	113285
19,	2.00	13690	3.75	33025	13.46	225660	4.65	46425	1.83	12250	2.41	17270	3.25	26125	2.16	15065	1.00	6475	3.33	27205	2.16	15065	8.13	108360
20,	2.16	15065	3.75	33025	11.13	170740	4.31	41155	1.83	12250	2.33	16555	3.16	24930	2.00	13690	1.00	6475	3.00	23000	1.91	12920	7.46	95340
21,	2.16	15065	3.75	33025	9.30	131680	3.98	36320	1.75	11590	2.16	15065	3.33	27205	2.00	13690	1.00	6475	2.91	22065	1.83	12250	6.96	85850
22,	5.06	52760	3.90	35200	5.80	65130	3.83	34185	1.75	11590	2.16	15065	4.23	39950	1.91	12920	.91	5985	2.66	19600	1.75	11590	8.30	111710
23,	9.80	141820	3.90	35200	5.40	58320	3.50	29500	1.83	12250	2.16	15065	7.88	103470	1.91	12920	.83	5565	2.58	18845	1.75	11590	12.30	197330
24,	6.55	78300	3.98	36320	5.23	55510	3.41	28285	1.66	10860	2.00	13690	7.80	101920	1.75	11590	.83	5565	2.41	17270	1.66	10860	12.46	201150
25,	6.30	73870	4.06	37470	5.23	55510	3.25	26125	1.66	10860	2.00	13690	7.05	87550	1.75	11590	.83	5565	2.25	15850	1.66	10860	11.30	174580
26,	5.31	56825	6.21	72285	4.56	45030	3.00	23000	1.66	10860	2.00	13690	7.55	97070	1.58	10225	1.66	10860	2.41	17270	1.91	12920	8.05	106785
27,	4.98	51490	9.21	129870	3.66	31740	2.91	22065	1.66	10860	2.16	15065	7.88	103470	1.58	10225	3.75	33025	2.33	16555	2.00	13690	7.05	87550
28,	5.23	55510	9.40	134895	3.66	31740	2.75	20465	1.66	10860	2.41	17270	6.63	79745	1.50	9610	5.06	52760	2.33	16555	2.25	15850	5.96	67905
29,	5.23	55510	------	------	4.31	41155	2.75	20465	1.66	10860	2.41	17270	5.73	63925	1.41	8970	4.23	39950	3.66	31740	2.33	16555	5.48	59665
30,	4.23	39950	------	------	4.31	41155	2.75	20465	1.66	10860	3.00	23000	5.96	67905	1.25	7925	4.23	39950	5.56	61020	2.41	17270	4.73	47665
31,	3.91	35340	------	------	5.23	55510	------	------	1.75	11590	------	------	5.96	67905	1.25	7925	------	------	5.80	65130	------	------	4.48	43790

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1904.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.16	15065	4.31	------	9.21	------	6.20	72110	7.45	95150	3.65	31600	1.90	12835	1.58	10225	1.43	9110	1.78	11835	2.08	14380	1.79	11915
2,	2.16	15065	4.06	------	11.30	------	9.95	144950	6.45	76515	3.90	35200	1.73	11425	1.68	11020	1.28	8110	1.68	11020	1.98	13520	1.54	9920
3,	3.90	35200	3.90	------	11.71	------	12.86	210860	6.20	72110	4.13	38485	1.98	13520	1.93	13090	1.23	7805	1.53	9840	1.88	12670	1.44	9180
4,	3.16	24930	4.65	------	13.30	------	10.95	166675	5.55	60850	4.13	38485	1.90	12835	1.93	13090	1.23	7805	1.78	11835	1.78	11835	1.24	7865
5,	3.16	24930	3.41	28285	21.80	------	9.20	129670	4.80	47850	3.98	36320	1.65	10780	1.88	12670	1.18	7505	1.93	13090	1.68	11020	1.29	8170
6	2.91	22065	4.31	------	19.21	------	7.53	96682	3.96	36040	4.80	48750	1.73	11425	1.78	11835	1.13	7210	1.73	11425	1.64	10700	.94	6150
7,	2.91	22065	3.75	------	16.13	------	6.53	77940	3.96	36320	5.13	53885	1.73	11425	2.08	14380	1.08	6920	1.58	10225	1.60	10380	1.29	8170
8,	2.83	21250	3.83	------	20.96	436060	5.95	67730	3.81	33895	4.63	46115	2.23	15675	2.03	13950	.98	6365	1.48	9470	1.54	9920	1.09	6975
9,	2.83	21250	5.40	------	15.71	------	5.86	66170	3.48	29230	3.98	36320	2.56	18660	1.78	11835	.98	6365	1.38	8765	1.54	9920	1.24	7865
10,	2.83	21250	8.88	------	14.80	------	6.20	72110	3.40	28150	3.56	30340	2.56	18660	1.68	11020	1.18	7505	1.23	7805	1.49	9540	1.19	7565
11,	3.00	23000	9.13	------	11.80	------	8.28	111315	3.15	24800	4.21	39650	4.38	42240	1.88	12670	1.18	7505	1.18	7505	1.59	10300	.84	5615
12,	3.58	30620	8.21	------	8.96	------	8.95	124650	2.98	22790	5.30	56660	4.96	51180	1.63	10620	1.18	7505	1.22	7805	1.54	9920	.94	6150
13,	3.83	34185	9.71	------	7.71	100175	7.78	101530	2.90	21960	4.55	44875	4.30	41000	1.58	10225	1.13	7210	1.22	7805	1.59	10300	1.69	11100
14,	4.81	48900	13.30	------	6.38	75280	6.97	85660	2.56	18660	3.90	35200	3.73	32735	1.48	9470	1.08	6920	1.23	7805	1.69	11100	1.44	9180
15,	4.56	45030	12.30	------	5.88	66515	6.11	70525	2.81	21050	3.23	25855	3.23	25855	1.33	8430	1.38	8765	1.38	8765	1.64	10700	1.49	9540
16,	4.40	42550	11.38	------	5.48	59665	5.15	54210	3.15	24800	2.90	21960	2.90	21960	1.33	8430	1.58	10225	2.93	22270	1.50	10300	1.39	8835
17,	4.90	50250	9.96	------	5.15	54210	5.05	52600	3.40	28150	2.65	19505	2.56	18660	1.28	8110	1.98	13520	2.73	20270	1.54	9920	1.30	8230
18,	4.90	50250	9.71	------	4.73	47665	4.96	51180	3.65	31600	2.81	21050	2.28	16115	1.23	7805	2.18	15240	2.38	17000	1.49	9540	1.50	9610
19,	4.15	38775	8.96	------	4.56	45030	4.46	43480	3.98	36320	2.81	21050	2.08	14380	1.13	7210	1.78	11835	2.13	14810	1.59	10300	1.50	9610
20.	3.98	36320	8.96	------	4.56	45030	4.38	42240	4.88	49950	2.56	18660	1.98	13520	1.18	7505	1.78	11835	1.88	12670	1.59	10300	1.50	9610
21,	4.06	37470	8.46	------	4.90	50250	3.90	35200	5.86	66170	2.56	18660	2.03	13950	1.28	8110	1.63	10620	1.73	11425	1.49	9540	1.40	8900
22,	4.56	45030	8.96	------	5.48	59665	3.31	26935	6.36	74925	2.65	19505	1.88	12670	1.18	7505	1.43	9110	1.88	12670	1.54	9920	1.40	8900
23,	5.40	58320	9.96	------	6.46	76690	3.73	32735	5.21	55185	2.56	18660	1.93	13090	1.28	8110	1.33	8450	2.93	22270	1.59	10300	1.50	9610
24,	*15.30	------	9.96	------	6.88	84350	3.56	30340	4.46	43480	2.56	18660	2.98	22790	1.28	8110	1.18	7505	3.76	33170	1.69	11100	1.60	10380
25,	11.30	------	10.55	------	10.21	150475	3.40	28150	4.13	38485	2.73	20270	2.13	14810	1.28	8110	1.18	7505	4.06	37470	1.69	11100	1.60	10380
26,	9.96	------	10.21	------	10.80	163320	3.48	29230	3.81	33895	2.48	17915	1.83	12250	1.68	11020	1.08	6920	3.58	30620	1.79	11915	1.60	10380
27,	7.46	------	10.38	------	15.05	265270	3.48	29230	3.98	36320	2.31	16380	1.73	11425	2.33	16555	1.03	6645	3.03	23345	1.89	12755	1.80	12000
28,	6.63	------	9.30	------	13.63	229860	3.73	32735	3.90	35200	2.06	14205	1.68	11020	2.08	14380	1.13	7210	2.68	19790	1.84	12335	1.90	12835
29,	5.73	------	8.88	------	12.30	197330	4.80	48750	3.65	31600	1.98	13520	1.78	11835	1.83	12250	1.63	10620	2.53	18380	1.74	11505	2.10	14550
30,	4.65	------	------	------	9.96	145160	6.78	82490	3.31	26935	1.81	12085	1.68	11020	1.63	10620	1.73	11425	2.48	17915	1.84	12335	9.40	133690
31,	4.40	------	------	------	8.21	109935	------	------	3.40	28150	------	------	1.63	10620	1.53	9840	------	------	2.28	16115	------	------	8.40	113680

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*Several gorges from January 24 to March 8, causing backwater; maximum flow was on March 8, when ice gorges broke. Discharge estimated from McCall's Ferry. See "Estimated Monthly Discharge."

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1905. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.8	82860	4.8	48750	3.7	32300	8.3	111710	3.1	24150	1.9	12835	2.7	19980	2.0	13690	1.85	12415	1.8	12000	2.4	17180	5.3	56660
2,	5.11	53560	4.8	48750	3.7	32300	7.45	95150	3.0	23000	1.9	12835	2.5	18100	1.9	12835	1.8	12000	1.75	11590	2.3	16290	6.4	75630
3,	5.8	65130	4.8	48750	3.6	30900	6.8	82860	2.8	20950	2.0	13690	2.45	17640	2.0	13690	1.8	12000	1.8	12000	2.3	16290	6.2	72110
4,	5.2	55020	4.6	45650	3.55	30200	6.0	68600	2.7	19980	1.85	12415	2.35	16735	2.1	14550	2.1	14550	1.75	11590	2.3	16290	11.25	172450
5,	4.4	42550	4.6	45650	3.4	28150	5.3	56660	2.6	19030	1.85	12415	2.35	16735	2.2	15410	4.5	44100	1.8	12000	2.3	16290	12.18	194530
6,	5.2	55020	4.6	45650	3.55	30200	4.95	51025	2.5	18100	1.80	12000	3.05	23575	2.1	14550	3.9	35200	1.8	12000	2.35	16735	10.0	140000
7,	5.5	60000	4.6	45650	3.6	30900	5.05	52600	2.45	17640	2.0	13690	2.85	21455	2.45	17640	3.5	29500	1.8	12000	2.35	16735	8.15	108755
8,	9.9	143900	4.4	42550	3.7	32300	5.8	65130	2.5	18100	2.2	15410	2.55	18565	2.2	15410	4.9	50250	1.9	12835	2.3	16290	6.7	81020
9,	8.7	119650	4.4	42550	4.02	36890	5.7	63410	2.5	18100	3.3	26800	2.30	16290	2.05	14120	4.4	42550	1.9	12835	2.4	17180	5.7	63410
10,	7.9	103860	4.4	42550	4.8	48750	5.3	56660	2.5	18100	3.7	32300	3.0	23000	1.9	12835	3.5	29500	1.7	11180	2.4	17180	5.1	53400
11,	6.5	77400	4.4	42550	5.5	60000	5.0	51800	2.5	18100	3.7	32300	3.15	24800	2.45	17640	3.0	23000	1.6	10380	2.7	19980	4.65	46425
12,	5.4	58320	4.0	36600	8.1	107770	4.8	48750	2.45	17640	3.3	26800	2.85	21455	1.95	13360	3.1	24150	2.15	14980	2.7	19980	4.4	42550
13,	5.3	56660	4.1	38050	7.45	95150	5.0	51800	2.35	16735	3.1	24150	2.5	18100	2.5	18100	3.6	30900	3.5	29500	2.6	19030	4.1	38050
14,	4.8	48750	4.0	36600	7.0	86600	5.4	58320	2.4	17180	3.15	24800	2.5	18100	4.0	36600	3.65	31600	3.8	33750	2.5	18100	3.9	35200
15,	4.8	48750	4.0	36600	6.8	82860	5.3	56660	2.65	19505	3.15	24800	2.5	18100	4.15	38775	4.15	38775	4.3	41000	2.35	16735	3.4	28150
16,	4.3	41000	3.9	35200	6.7	81020	4.9	50250	2.8	20950	3.0	23000	2.6	19030	5.7	63410	3.85	34475	3.9	35200	2.35	16735	3.1	24150
17,	3.9	35200	3.9	35200	6.6	79200	4.5	44100	2.95	22480	2.7	19980	2.6	19030	6.15	71230	3.4	28150	3.4	28150	2.25	15850	3.0	23000
18,	3.9	35200	3.8	33750	6.45	76515	4.25	40250	3.2	25450	2.45	17640	2.35	16735	4.9	50250	3.05	23575	2.9	21960	2.2	15410	2.6	19030
19,	3.9	35200	3.8	33750	6.0	68600	4.1	38050	3.05	23575	2.35	16735	2.15	14980	4.0	36600	3.0	23000	2.65	19505	2.15	14980	2.5	18100
20,	3.7	32300	3.7	32300	12.86	210860	3.9	35200	3.05	23575	2.25	15850	2.0	13690	3.45	28825	3.05	23575	3.0	23000	2.05	14120	2.4	17180
21	3.65	31600	3.6	30900	15.71	282315	3.7	32300	2.85	21455	2.4	17180	1.85	12415	3.25	26125	3.1	24150	3.6	30900	2.0	13690	2.7	19980
22,	3.65	31600	3.6	30900	15.56	278370	3.65	31600	2.7	19980	3.5	29500	1.7	11180	2.95	22480	3.6	30900	4.75	47975	1.9	12835	4.1	38050
23,	3.35	27475	3.6	30900	13.85	235295	3.6	30900	2.6	19030	4.65	46425	1.6	10380	2.65	19505	3.2	25450	4.95	51025	1.9	12835	4.75	47975
24,	3.3	26800	3.6	30900	11.75	184750	4.0	36600	2.45	17640	6.1	70350	1.7	11180	2.4	17180	2.9	21960	4.4	42550	1.8	12000	5.25	55840
25,	3.0	23000	3.55	30200	11.72	184070	4.6	45650	2.35	16735	6.2	72110	1.65	10780	2.5	18100	2.8	20950	3.9	35200	1.8	12000	5.75	64270
26,	*2.9	21960	3.6	30900	14.05	240235	4.2	39500	2.25	15850	5.3	56660	1.75	11590	3.6	30900	2.55	18565	3.5	29500	1.7	11180	5.3	56660
27,	4.35	41775	3.5	29500	13.62	229615	3.9	35200	2.1	14550	4.5	44100	1.6	10380	2.9	21960	2.3	16290	3.25	26125	1.7	11180	4.7	47200
28,	4.8	48750	3.65	31600	12.68	206465	3.6	30900	2.1	14550	3.8	33750	1.8	12000	2.65	19505	2.1	14550	3.0	23000	1.7	11180	4.1	38050
29,	4.8	48750	------	------	11.52	179550	3.35	27475	2.1	14550	3.3	26800	2.05	14120	2.35	16735	2.0	13690	2.8	20950	1.75	11590	3.95	35900
30,	4.8	48750	------	------	10.42	155005	3.25	26125	2.0	13690	2.95	22480	2.0	13690	2.1	14550	1.9	12835	2.65	19505	2.9	21960	4.2	39500
31,	4.8	48750	------	------	9.3	131680	------	------	1.95	13360	------	------	2.2	15410	1.85	12415	------	------	2.5	18100	------	------	4.5	44100

*River frozen at gage. Reading to top of ice. Open water at gage February 27 to March 11. Ice went out. March 19.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1906.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1.	5.2	55020	3.9	35200	3.65	31600	10.75	162215	3.35	27475	5.45	59160	2.2	15410	1.7	11180	2.3	16290	1.0	6475	2.8	20950	2.6	19030
2,	4.95	51025	3.4	28150	3.5	29500	10.6	158920	3.2	25450	4.6	45650	2.75	20465	1.7	11180	2.2	15410	1.0	6475	2.8	20950	2.5	18100
3,	4.4	42550	3.3	26800	3.0	23000	9.1	127660	3.05	23575	4.0	36600	2.45	17640	1.6	10380	2.0	13690	1.0	6475	2.8	20950	2.4	17180
4,	4.4	42550	2.8	20950	3.7	32300	7.9	103860	3.05	23575	3.6	30900	2.3	16290	1.7	11180	2.1	14550	1.0	6475	2.7	19980	2.2	15410
5,	4.85	49500	2.7	19980	7.5	96100	7.2	90400	3.1	24150	3.2	25450	3.4	28150	1.8	12000	2.5	18100	1.8	12000	2.7	19980	2.1	14550
6,	5.15	54210	2.2	15410	7.0	86600	7.3	92300	3.15	24800	3.1	24150	3.3	26800	2.2	15410	2.2	15410	2.2	15410	2.5	18100	2.3	16290
7,	5.1	53400	1.8	12000	6.1	70350	8.3	111710	3.6	30900	2.85	21455	2.85	21455	2.2	15410	2.1	14550	1.9	12835	2.4	17180	2.2	15410
8,	4.9	50250	1.9	12835	5.8	65130	8.25	110725	3.4	28150	2.9	21960	2.55	18565	2.1	14550	1.9	12835	1.8	12000	2.3	16290	2.3	16290
9,	4.1	38050	2.0	13690	4.8	48750	7.4	94200	3.2	25450	3.5	29500	2.3	16290	2.2	15410	1.7	11180	1.6	10380	2.2	15410	4.6	45650
10,	3.65	31600	2.0	13690	4.2	39500	7.2	90400	3.0	23000	3.8	33750	2.2	15410	2.3	16290	1.6	10380	1.6	10380	2.1	14550	4.6	45650
11.	3.0	23000	2.05	14120	4.0	36600	8.95	124650	3.0	23000	3.3	26800	2.05	14120	2.3	16290	1.5	9610	1.4	8900	2.0	13690	3.9	35200
12,	3.0	23000	2.1	14550	3.6	30900	10.1	148120	2.85	21455	2.9	21960	2.0	13690	2.9	21960	1.5	9610	1.4	8900	2.0	13690	3.5	29500
13,	3.0	23000	1.9	12835	3.5	29500	9.5	135700	2.8	20950	2.95	22480	1.9	12835	3.7	32300	1.4	8900	1.5	9610	1.9	12835	3.6	30900
14,	3.1	24150	2.15	14980	3.5	29500	8.2	109740	2.7	19980	2.8	20950	1.75	11590	3.2	25450	1.4	8900	1.5	9610	1.9	12835	3.5	29500
15,	3.2	25450	2.5	18100	3.2	25450	8.85	122650	2.6	19030	2.7	19980	1.9	12835	2.8	20950	1.3	8230	1.4	8900	2.0	13690	3.5	29500
16,	3.35	27475	2.5	18100	3.1	24150	11.2	172320	2.7	19980	2.6	19030	1.8	12000	2.5	18100	1.2	7625	1.3	8230	2.0	13690	3.3	26800
17,	3.1	24150	2.1	14550	3.1	24150	9.9	143900	2.5	18100	2.4	17180	1.8	12000	2.1	14550	1.1	7035	1.3	8230	2.1	14550	3.4	28150
18,	3.55	30200	2.2	15410	2.9	21960	8.9	123650	2.55	18565	2.7	19980	1.8	12000	1.9	12835	1.1	7035	1.3	8230	2.1	14550	3.9	35200
19,	3.5	29500	2.0	13690	2.7	19980	7.8	101920	2.5	18100	3.9	35200	1.7	11180	1.7	11180	1.0	6475	1.3	8230	2.1	14550	4.5	44100
20,	3.3	26800	2.0	13690	2.7	19980	6.6	79200	2.7	19980	6.8	82860	2.4	17180	1.6	10380	1.1	7035	2.0	13690	2.2	15410	4.1	38050
21,	3.3	26800	2.15	14980	2.5	18100	5.8	65130	2.75	20465	5.9	66860	2.2	15410	2.1	14550	1.0	6475	3.5	29500	3.2	25450	3.8	33750
22,	3.6	30900	2.7	19980	2.5	18100	5.35	57490	2.6	19030	5.4	58320	2.2	15410	2.3	16290	1.0	6475	4.4	42550	4.2	39500	3.9	35200
23,	3.55	30200	2.55	18565	2.6	19030	4.9	50250	2.45	17640	4.9	50250	2.1	14550	2.0	13690	1.0	6475	5.1	53400	4.2	39500	3.8	33750
24,	4.5	44100	3.9	35200	2.3	16290	4.6	45650	2.3	16290	4.2	39500	2.0	13690	2.0	13690	.9	5930	4.4	42550	4.2	39500	3.3	26800
25,	9.15	128665	3.75	33025	2.35	16735	4.8	48750	2.1	14550	3.7	32300	1.9	12835	2.4	17180	.9	5930	4.0	36600	4.0	36600	2.9	21960
26,	8.75	120650	4.3	41000	2.4	17180	4.6	45650	2.05	14120	3.3	26800	1.8	12000	2.2	15410	1.0	6475	3.6	30900	3.7	32300	2.9	21960
27,	7.4	94200	4.6	45650	2.3	16290	4.5	44100	2.15	14980	2.95	22480	1.8	12000	2.2	15410	1.0	6475	3.3	26800	3.3	26800	2.5	18100
28,	6.35	74750	4.0	36600	3.1	24150	4.25	40250	2.25	15850	2.7	19980	1.7	11180	2.8	20950	1.0	6475	3.0	23000	3.0	23000	2.1	14550
29,	5.5	56660	------	------	8.05	106785	3.85	34475	3.8	33750	2.45	17640	1.7	11180	3.2	25450	1.0	6475	2.9	21960	2.9	21960	2.2	15410
30,	4.7	47200	------	------	10.2	150260	3.6	30900	7.2	90400	2.35	16735	1.7	11180	2.8	20950	1.0	6475	2.9	21960	2.7	19980	2.5	18100
31,	4.4	42550	------	------	9.5	135700	------	------	6.6	79200	------	------	1.7	11180	2.4	17180	------	------	2.8	20950	------	------	3.0	23000

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1907. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.6	79200	3.2	25150	3.3	26800	6.0	68600	5.6	61700	2.5	18100	2.4	17180	1.5	9610	0.6	4435	2.0	13690	4.2	39500	3.0	23000
2,	9.9	143900	3.2	25450	3.3	26800	5.4	58320	4.9	50250	2.6	19030	2.9	21960	1.4	8900	0.5	3995	2.0	13690	3.7	32300	2.9	21960
3,	9.3	131680	3.1	24150	3.5	29500	4.9	50250	4.7	47200	3.3	26800	3.5	29500	1.3	8230	0.6	4435	2.0	13690	4.0	36600	2.9	21960
4,	7.9	103860	3.0	23000	3.6	30900	4.4	42550	4.8	48750	4.6	45650	3.7	32300	1.2	7625	0.6	4435	1.9	12835	5.1	53400	2.8	20950
5,	7.0	86600	2.9	21960	3.4	28150	4.1	38050	4.5	44100	4.7	47200	3.5	29500	1.3	8230	1.0	6475	2.2	15410	5.4	58320	2.5	18100
6	6.9	84720	2.7	19980	3.4	28150	3.8	33750	4.2	39500	4.2	39500	3.0	23000	1.1	7035	1.4	8900	2.2	15410	5.5	60000	2.5	18100
7,	7.5	96100	3.1	24150	3.5	29500	3.6	30900	4.0	36600	4.1	38050	2.8	20950	1.1	7035	1.1	7035	2.5	18100	4.9	50250	2.4	17180
8,	6.7	81020	5.8	65130	3.4	28150	3.5	29500	4.0	36600	4.0	36600	2.8	20950	1.0	6475	1.2	7625	2.9	21960	4.8	48750	2.3	16290
9,	5.9	66860	5.8	65130	3.4	28150	3.5	29500	4.0	36600	3.7	32300	2.6	19030	1.0	6475	1.2	7625	3.3	26800	5.9	66860	2.2	15410
10,	7.0	86600	5.9	66860	3.6	30900	4.0	36600	4.4	42550	3.6	30900	2.7	19980	1.5	9610	1.8	12000	3.6	30900	6.8	82860	2.8	20950
11,	7.2	90400	5.9	66860	3.5	29500	4.0	36600	5.5	60000	3.3	26800	2.4	17180	1.2	7625	2.7	19980	3.7	32300	6.1	70350	9.9	143900
12,	6.4	75630	5.9	66860	3.4	28150	3.9	35200	5.3	56660	3.1	24150	2.3	16290	1.1	7035	4.0	36600	4.0	36600	5.4	58320	10.7	161110
13,	5.9	66860	5.3	56660	3.5	29500	3.8	33750	4.8	48750	3.0	23000	2.1	14550	1.1	7035	4.1	38050	3.6	30900	4.7	47200	10.0	146000
14,	6.2	72110	5.3	56660	6.1	70350	3.7	32300	4.4	42550	3.1	24150	2.0	13690	1.0	6475	3.6	30900	3.2	25450	4.2	39500	8.3	111710
15,	6.8	82860	5.2	55020	11.5	179100	3.6	30900	4.1	38050	3.1	24150	2.1	14550	1.0	6475	3.6	30900	3.1	24150	3.8	33750	7.0	86600
16,	7.3	92300	4.9	50250	13.3	221710	3.7	32300	3.9	35200	3.6	30900	2.1	14550	0.9	5930	3.1	24150	2.9	21960	3.5	29500	6.0	68600
17,	7.3	92300	5.0	51800	11.0	167800	3.5	29500	3.7	32300	3.2	25450	2.2	15410	0.8	5410	2.6	19030	2.7	19980	3.2	25450	5.3	56660
18,	6.5	77400	5.1	53400	10.2	150260	3.5	29500	3.5	29500	2.9	21960	2.2	15410	0.8	5410	2.3	16290	2.5	18100	3.0	23000	4.9	50250
19,	5.7	63410	4.7	47200	10.5	156740	3.4	28150	3.4	28150	2.6	19030	2.0	13690	0.7	4905	2.2	15410	2.3	16290	2.9	21960	4.5	44100
20,	5.7	63410	4.5	44100	11.0	167800	3.2	25450	3.2	25450	2.6	19030	2.2	15410	0.7	4905	2.1	14550	2.3	16290	2.8	20950	4.1	38050
21,	6.5	77400	4.5	44100	11.5	179100	3.2	25450	3.1	24150	2.3	16290	2.0	13690	0.6	4435	2.0	13690	2.0	13690	2.8	20950	3.9	35200
22,	9.1	127660	4.3	41000	10.1	148120	3.1	24150	3.0	23000	2.2	15410	1.9	12835	0.6	4435	2.1	14550	1.9	12835	2.7	19980	3.7	32300
23,	8.1	107770	3.7	32300	8.6	117650	3.1	24150	2.9	21960	2.2	15410	1.9	12835	0.6	4435	2.4	17180	1.8	12000	2.8	20950	3.5	29500
24,	6.5	77400	3.3	26800	8.7	119650	3.0	23000	2.8	20950	2.1	14550	1.8	12000	0.7	4905	2.5	18100	1.8	12000	2.8	20950	4.6	45650
25	5.3	56660	3.3	26800	9.8	141820	3.2	25450	2.6	19030	2.2	15410	1.8	12000	0.9	5930	2.8	20950	1.9	12835	3.0	23000	8.8	121650
26,	4.4	42550	3.4	28150	8.9	123650	3.6	30900	2.5	18100	2.4	17180	1.6	10380	0.9	5930	2.6	19030	1.8	12000	3.1	24150	10.7	161110
27,	4.0	36600	3.3	26800	7.8	101920	5.4	58320	2.5	18100	2.5	18100	1.5	9610	1.0	6475	2.4	17180	1.8	12000	3.0	23000	9.1	127660
28,	3.6	30900	3.5	29500	6.9	84720	5.6	61700	2.4	17180	2.4	17180	1.4	8900	0.9	5930	2.2	15410	1.9	12835	3.0	23000	7.6	98040
29,	3.1	24150	-----	-----	6.4	75630	7.2	90400	2.4	17180	2.3	16290	1.4	8900	0.8	5410	2.1	14550	2.0	13690	2.9	21960	6.7	81020
30,	3.2	25450	-----	-----	6.3	73870	6.3	73870	2.4	17180	2.4	17180	1.5	9610	0.8	5410	2.1	14550	3.3	26800	2.9	21960	7.0	86600
31,	3.1	24150	-----	-----	6.5	77400	-----	-----	2.5	18100	-----	-----	1.5	9610	0.6	4435	-----	-----	3.9	35200	-----	-----	7.8	101920

-River frozen February 1 to March 14.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	7.55	97070	2.45	17640	4.65	46425	9.8	141820	3.7	32300	5.1	53400	1.4	8900	1.6	10380	0.7	4905	1.0	6475	1.4	8900	0.8	5410
2,	6.8	82860	2.6	19030	4.1	38050	8.2	109140	4.4	42550	5.0	51800	1.4	8900	1.4	8900	0.6	4435	0.7	4905	1.3	8230	0.8	5410
3,	6.25	72990	1.75	11590	3.85	34475	7.2	90400	5.1	53400	4.7	47200	1.4	8900	1.3	8230	0.6	4435	0.6	4435	1.2	7625	0.6	4435
4,	5.5	60000	1.4	8900	4.2	39500	6.6	79200	6.1	70350	4.2	39500	1.4	8900	1.1	7035	0.5	3995	0.6	4435	1.1	7035	0.6	4435
5,	4.95	51025	1.75	11590	4.9	50250	6.1	70350	6.0	68600	3.8	33750	1.7	11180	1.1	7035	0.5	3995	0.6	4435	0.9	5930	0.5	3995
6,	4.45	43325	2.55	18565	5.3	56660	5.5	60000	5.6	61700	3.5	29500	1.7	11180	1.1	7035	0.5	3995	0.5	3995	0.9	5930	0.5	3995
7,	4.0	36600	2.3	16290	5.4	58320	5.1	53400	5.4	58320	3.2	25450	1.9	12835	1.2	7625	0.5	3995	0.5	3995	0.9	5930	0.6	4435
8,	3.55	30200	3.05	23575	6.7	81020	4.8	48750	8.6	117650	2.9	21900	1.6	10380	1.2	7625	0.4	3590	0.4	3590	0.9	5930	0.4	3590
9,	3.2	25450	4.5	44100	8.0	105800	4.7	47200	11.0	167800	2.7	19980	1.5	9610	1.2	7625	0.4	3590	0.4	3590	0.9	5930	0.3	3220
10,	2.85	21455	3.95	35900	7.8	101920	5.2	55020	10.5	156740	2.6	19030	1.4	8900	1.4	8900	0.4	3590	0.4	3590	0.8	5410	0.4	3590
11,	2.95	22480	3.85	34475	6.9	84720	5.7	63410	9.6	137720	2.5	18100	1.3	8230	1.2	7625	0.4	3590	0.6	4435	0.8	5410	0.8	5410
12,	3.0	23000	3.7	32300	7.1	88500	6.2	72110	8.5	115650	2.4	17180	1.3	8230	1.2	7625	0.3	3220	0.6	4435	0.7	4905	0.6	4435
13,	5.55	60850	3.65	31600	7.7	99980	5.8	65130	7.4	94200	2.3	16290	1.4	8900	1.1	7035	0.3	3220	0.6	4435	0.7	4905	0.9	5930
14,	7.8	101920	3.6	30900	9.4	133690	5.2	55020	6.4	75630	2.1	14550	1.3	8230	1.1	7035	0.3	3220	0.6	4435	0.7	4905	0.4	3590
15,	7.45	95150	3.75	33025	12.7	206950	4.8	48750	5.7	63410	2.0	13690	1.3	8230	1.0	6475	0.3	3220	0.6	4435	0.5	3995	0.9	5930
16,	6.95	85660	12.45	200910	13.9	236530	4.6	45650	6.1	70350	2.0	13690	1.2	7625	0.9	5930	0.3	3220	0.6	4435	0.6	4435	1.1	7035
17,	5.8	65130	*14.4	248920	14.8	258540	4.6	45650	6.9	84720	2.1	14550	1.2	7625	0.9	5930	0.3	3220	0.5	3995	0.4	3590	1.0	6475
18,	5.15	54210	12.35	198520	13.0	214600	4.7	47200	7.1	88500	2.0	13690	1.2	7625	0.9	5930	0.3	3220	0.5	3995	0.7	4905	1.1	7035
19,	4.5	44100	9.6	137720	12.7	206950	4.9	50250	6.7	81020	2.0	13690	1.1	7035	0.9	5930	0.2	2895	0.5	3995	0.7	4905	0.8	5410
20,	4.15	38775	7.65	99015	†15.9	287540	5.0	51800	8.0	105800	1.8	12000	1.1	7035	0.9	5930	0.2	2895	0.4	3590	0.9	5930	1.3	8230
21,	3.85	34475	6.25	72990	14.1	241470	5.3	56660	9.7	139760	1.8	12000	1.0	6475	1.0	6475	0.2	2895	0.4	3590	0.8	5410	1.5	9610
22,	3.6	30900	5.3	56660	10.4	154570	6.0	68600	8.5	115650	1.7	11180	1.2	7625	1.0	6475	0.2	2895	0.4	3590	0.8	5410	1.6	10380
23,	3.55	30200	4.75	47975	8.6	117650	5.7	63410	8.3	111710	1.6	10380	1.4	8900	1.1	7035	0.2	2895	0.4	3590	0.8	5410	1.8	12000
24,	3.6	30900	4.2	39500	7.6	98040	5.2	55020	7.6	98040	1.6	10380	1.7	11180	1.0	6475	0.2	2895	0.5	3590	0.8	5410	1.6	10380
25,	3.65	31600	3.95	35900	7.4	94200	4.8	48750	7.0	86600	1.6	10380	2.8	20950	1.0	6475	0.2	2895	0.4	3995	0.8	5410	1.6	10380
26,	3.45	28825	3.95	35900	8.3	111710	4.4	42550	6.0	68600	1.6	10380	3.1	24150	1.0	6475	0.2	2895	0.9	5930	0.8	5410	1.4	8900
27	3.3	26800	7.0	86600	8.8	121650	4.2	39500	5.3	56660	1.6	10380	3.0	23000	1.0	6475	0.2	2895	1.3	8230	0.8	5410	1.3	8230
28,	3.05	23575	6.25	72990	8.7	119650	4.0	36600	5.5	60000	1.6	10380	2.7	19980	1.0	6475	0.2	2895	1.3	8230	0.8	5410	1.2	7625
29,	3.0	23000	5.2	55020	10.0	146000	4.0	36600	4.9	50250	1.5	9610	2.6	19030	0.9	5930	0.7	4905	1.6	10380	0.8	5410	1.1	7035
30,	2.75	20465	------	------	11.2	172320	3.8	3375	4.6	45650	1.5	9610	2.2	15410	0.8	5410	1.1	7035	1.4	8900	0.8	5410	1.3	8230
31,	2.4	17180	------	------	11.3	174580	------	------	4.8	48750	------	------	1.9	12835	0.7	4905	------	------	1.4	8900	------	------	1.2	7625

*Maximum about 15.0 feet=264000 sec.-ft.
†Maximum 16.0 feet at noon=290000 sec.-ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1903. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.06	37470	11.30	174580	13.21	219485	6.30	73870	3.41	28285	1.50	9610	7.13	89070	3.50	29500	10.09	147910	1.75	11590	3.16	24930	2.50	18100
2,	3.66	31740	10.30	152410	16.63	307180	7.05	87550	3.25	26125	1.50	9610	5.80	65130	3.33	27205	8.13	108360	1.75	11590	3.08	23920	2.41	17270
3,	3.83	34185	8.55	116650	14.30	246430	7.30	92300	3.00	23000	1.50	9610	5.06	52760	2.91	22065	6.63	79745	1.75	11590	3.00	23000	2.33	16555
4,	4.73	47665	8.71	119870	10.80	163320	6.55	78330	2.58	18845	1.50	9610	4.56	45030	2.66	19600	5.56	61020	1.58	10225	2.83	21250	2.16	15065
5,	5.48	59665	13.63	229860	8.80	121650	6.30	73870	2.50	18100	1.50	9610	3.98	36320	2.41	17270	5.06	52760	1.58	10225	2.83	21250	2.08	14380
6,	5.81	65300	14.38	248420	8.55	116650	5.65	62555	2.33	16555	1.50	9610	4.31	41155	2.50	18100	4.48	43790	1.50	9610	2.66	19600	2.00	13690
7,	6.13	70880	12.05	191540	7.46	95340	5.65	62555	2.33	16555	1.50	9610	4.56	45030	2.91	22065	3.90	35200	1.41	8970	2.58	18845	2.00	13690
8,	5.73	63925	9.13	128265	7.96	105025	5.65	62555	2.25	15850	1.50	9610	5.23	55510	4.65	46425	3.33	27205	1.83	12250	2.50	18100	2.00	13690
9	4.90	50250	8.05	106785	7.80	101920	5.65	62555	2.16	15065	1.66	10860	5.23	55510	4.56	45030	3.66	31740	2.66	19600	2.50	18100	2.33	16555
10,	4.23	39950	6.80	82860	10.38	154140	6.63	79745	2.16	15065	2.25	15850	4.23	39950	3.98	36320	3.83	34185	4.90	50250	2.41	17270	2.16	15065
11,	3.41	28285	5.80	65130	12.30	197330	6.80	82860	2.16	15065	2.25	15850	3.83	34185	3.66	31740	3.50	29500	10.46	155870	2.41	17270	1.91	12920
12,	2.91	22065	5.96	67905	11.21	172545	6.63	7974	2.16	15065	2.25	15850	3.16	24930	3.50	29500	3.50	29500	11.05	168930	2.41	17270	1.91	12920
13,	2.66	19600	6.30	73870	11.71	183945	6.30	73870	2.08	14380	3.16	24930	3.25	26125	3.50	29500	3.50	29500	10.88	165105	2.41	17270	1.91	12920
14,	2.25	15850	6.46	76690	10.63	159575	6.30	73870	2.08	14380	3.66	31740	3.25	26125	3.50	29500	3.33	27205	9.05	126655	2.33	16555	2.00	13690
15,	2.25	15850	7.30	92300	9.55	136710	8.63	118250	2.08	14380	3.98	36320	2.75	20465	3.00	23000	3.50	29500	7.13	89070	2.33	16555	1.00	6475
16,	2.66	19600	7.46	95340	8.13	108360	12.46	201150	2.08	14380	4.23	39950	2.75	20465	3.16	24930	3.16	24930	5.81	65300	2.33	16555	1.00	6475
17,	3.00	23000	7.46	95340	7.63	98620	12.55	203315	2.08	14380	4.31	41155	2.58	18845	3.50	29500	2.83	21250	5.06	52760	2.33	16555	1.00	6475
18,	3.16	24930	6.80	82860	6.96	85850	10.46	155870	1.83	12250	4.15	38775	2.33	16555	3.33	27205	2.83	21250	4.73	47665	2.50	18100	1.33	8420
19.	3.16	24930	5.80	65130	6.30	73870	9.13	128265	1.83	12250	3.83	34185	3.08	23920	3.16	24930	3.16	24930	5.23	55510	8.46	114860	3.16	24930
20,	3.16	24930	5.15	54210	6.30	73870	7.80	101920	1.75	11590	3.41	28285	4.40	42550	2.83	21250	3.33	27205	6.30	73870	8.05	106785	3.90	35200
21,	3.16	24930	3.98	36320	5.40	58320	6.30	73870	1.75	11590	3.33	27205	5.56	61020	2.58	18845	3.00	23000	6.38	75280	6.30	73870	5.56	61020
22	3.25	26125	4.40	42550	5.56	61020	6.13	70880	1.66	10860	3.33	27205	5.31	56825	2.50	18100	2.83	21250	5.96	67905	5.96	67905	5.48	59665
23,	4.06	37470	4.40	42550	5.80	65130	5.73	63925	1.66	10860	3.66	31740	4.23	39950	2.33	16555	2.66	19600	5.40	58320	4.56	45030	5.48	59665
24,	3.90	35200	4.23	39950	9.21	129870	5.56	61020	1.66	10860	4.23	39950	3.91	35340	2.41	17270	2.50	18100	4.73	47665	4.23	39950	4.48	43790
25,	3.91	35340	4.06	37470	14.96	262990	5.15	54210	1.66	10860	5.48	59665	3.58	30620	2.33	16555	2.41	17270	4.31	41155	3.90	35200	4.31	41155
26,	3.50	29500	3.98	36320	13.96	238010	4.48	43790	1.66	10860	6.30	73870	3.16	24930	2.16	15065	2.33	16555	3.66	31740	3.75	33025	3.90	35200
27.	3.50	29500	4.48	43790	10.80	163320	4.40	42550	1.66	10860	6.96	85850	3.00	23000	2.16	15065	2.16	15065	3.75	33025	3.33	27205	3.50	29500
28,	3.58	30620	5.40	58320	9.38	133290	3.90	35200	1.66	10860	6.30	73870	3.00	23000	2.25	15850	2.08	14380	3.66	31740	2.50	18100	3.08	23920
29,	3.75	33025	......	......	7.96	105025	3.50	29500	1.58	10225	5.80	65130	2.83	21250	4.06	37470	1.83	12250	5.20	55020	2.50	18100	2.91	22065
30,	4.56	45030	......	......	6.63	79745	3.50	29500	1.58	10225	5.40	58320	3.00	23000	5.81	65300	1.83	12250	3.33	27205	2.50	18100	2.66	19600
31,	7.88	103470	......	......	6.63	79745	......	......	1.50	9610	......	......	3.33	27205	9.05	126655	......	......	3.16	24930	......	......	2.08	14380

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1909	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	0.8	5410	3.5	29500	7.6	98040	5.3	56660	11.1	170060	2.6	19030	2.4	17180	0.9	5930	0.5	3995	0.4	3590	0.7	4905	0.5	3995
2,	0.8	5410	3.1	24150	6.4	75630	4.9	50250	‡15.6	279420	2.5	18100	2.3	16290	0.9	5930	0.4	3590	0.3	3220	0.7	4905	0.5	3995
3,	1.0	6475	2.8	20950	5.7	63410	4.7	47200	15.5	276810	2.4	17180	2.1	14550	0.8	5410	0.4	3590	0.3	3220	0.7	4905	0.5	3995
4,	1.4	8900	2.7	19980	5.3	56660	4.5	44100	12.3	197330	2.4	17180	1.8	12000	0.8	5410	0.4	3590	0.3	3220	0.6	4435	0.6	4435
5,	1.6	10380	2.5	18100	5.2	55020	4.6	45650	10.0	146000	2.3	16290	1.7	11180	0.7	4905	0.4	3590	0.3	3220	0.6	4435	0.6	4435
6,	1.8	12000	2.6	19030	5.0	51800	4.6	45650	8.8	121650	2.8	20950	1.6	10380	0.7	4905	0.4	3590	0.3	3220	0.6	4435	0.6	4435
7,	2.5	18100	3.4	28150	4.6	45650	4.5	44100	7.8	101920	4.2	39500	1.5	9610	0.6	4435	0.3	3220	0.3	3220	0.5	3995	0.6	4435
8,	4.7	47200	4.9	50250	4.3	41000	4.4	42550	6.8	82680	4.1	38050	1.4	8900	0.6	4435	0.3	3220	0.2	2895	0.5	3995	0.7	4905
9,	5.3	56660	5.9	66860	4.3	41000	5.0	51800	6.2	72110	4.3	41000	1.3	8230	0.6	4435	0.3	3220	0.2	2895	0.5	3995	0.3	3220
10,	4.5	44100	5.5	60000	4.5	44100	5.4	58320	5.8	65130	4.0	36600	1.3	8230	0.5	3995	0.4	3590	0.2	2895	0.5	3995	0.2	2895
11,	3.8	33750	5.8	65130	4.8	48750	5.2	55020	5.3	56660	4.0	36600	1.2	7625	0.5	3995	0.6	4435	0.2	2895	0.5	3995	0.3	3220
12,	3.2	25450	5.5	60000	5.8	65130	4.7	47200	5.3	56660	3.8	33750	1.2	7625	0.5	3995	0.5	3995	0.5	3995	0.5	3995	0.5	3995
13,	2.9	21960	5.0	51800	6.8	82860	4.3	41000	5.0	51800	4.0	36600	1.1	7035	0.4	3590	0.5	3995	0.6	4435	0.5	3995	0.6	4435
14,	2.6	19030	4.6	45650	6.3	73870	4.3	41000	4.9	50250	4.6	45650	1.1	7035	0.4	3590	0.4	3590	0.7	4905	0.5	3995	2.3	16290
15,	2.5	18100	4.6	45650	5.6	61700	7.6	98040	4.7	47200	4.3	41000	1.0	6475	0.4	3590	0.4	3590	0.7	4905	0.5	3995	2.8	20950
16,	2.1	14550	5.6	61700	5.1	53400	†10.9	165550	4.3	41000	4.6	45650	1.0	6475	0.4	3590	0.6	4435	0.8	5410	0.4	3590	3.0	23000
17,	1.8	12000	8.3	111710	4.6	45650	10.2	150260	4.1	38050	4.7	47200	1.0	6475	0.5	3995	0.6	4435	0.8	5410	0.5	3995	2.5	18100
18,	1.2	7625	9.2	129670	4.2	39500	8.5	115650	4.0	36600	4.3	41000	1.0	6475	0.6	4435	0.5	3995	0.8	5410	0.5	3995	2.0	13690
19,	1.2	7625	8.0	105800	4.0	36600	7.2	90400	3.8	33750	4.4	42550	0.9	5930	0.9	5930	0.4	3590	0.7	4905	0.4	3590	1.5	9610
20,	1.4	8900	7.6	98040	3.7	32300	6.2	72110	3.5	29500	4.1	38050	0.9	5930	0.9	5930	0.4	3590	0.7	4905	0.4	3590	1.3	8230
21,	1.7	11180	8.9	123650	3.5	29500	5.9	66860	3.4	28150	3.8	33750	0.9	5930	0.7	4905	0.4	3590	0.6	4435	0.4	3590	2.2	15410
22,	2.0	13690	9.8	141820	3.3	26800	6.0	68600	3.3	26800	3.4	28150	0.9	5930	0.7	4905	0.4	3590	0.6	4435	0.4	3590	2.0	13690
23,	2.0	13690	9.1	127660	3.1	24150	6.3	73870	3.1	24150	3.1	24150	0.9	5930	0.7	4905	0.4	3590	0.6	4435	0.4	3590	2.2	15410
24,	2.1	14550	9.4	133690	3.0	23000	6.7	81020	3.0	23000	2.8	20950	0.9	5930	0.7	4905	0.4	3590	0.8	5410	0.4	3590	2.0	13690
25,	2.5	18100	11.9	188140	3.0	23000	6.5	77400	2.9	21960	2.6	19030	1.0	6475	0.7	4905	0.4	3590	0.8	5410	0.4	3590	2.2	15410
26,	6.5	77400	*12.7	206950	3.0	23000	5.8	65130	2.7	19080	2.6	19030	1.0	6475	0.8	5410	0.4	3590	0.8	5410	0.4	3590	2.0	13690
27,	9.4	133690	10.9	165550	4.2	39500	5.4	58320	2.7	19080	2.6	19030	1.0	6475	0.8	5410	0.4	3590	0.8	5410	0.4	3590	1.9	12835
28,	8.1	107770	8.9	123650	5.3	56660	4.9	50250	2.5	18100	2.8	20950	1.1	7035	0.6	4435	0.5	3995	0.8	5410	0.5	3995	1.8	12000
29,	6.6	79200	------	------	6.0	68600	4.6	45650	2.6	19030	2.6	19030	1.0	6475	0.6	4435	0.5	3995	0.8	5410	0.5	3995	1.7	11180
30,	5.3	56660	------	------	5.7	63410	4.7	47200	2.7	19980	2.4	17180	1.0	6475	0.5	3995	0.4	3590	0.7	4905	0.5	3995	1.4	8900
31,	4.6	45650	------	------	5.5	60000	------	------	2.7	19980	------	------	0.9	5930	0.5	3995	------	------	0.7	4905	------	------	1.5	9610

*Maximum 13.0 feet at 6 A. M.=214300 sec.-ft.
†Maximum 11.2 feet at 2 to 7 P. M.=172320 sec.-ft.
‡Maximum 16.0 feet 5 P. M. to 12 M.=290000 sec.-ft. Frozen December 9-13; 18-31.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1910	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.44	9185	3.29	26665	11.91	188365	3.68	32020	6.51	77580	3.80	33750	2.30	16290	.66	4715	.64	4625	1.63	10620	.58	4345	1.87	12585
2,	1.50	9610	2.91	22065	16.21	295650	3.47	29095	6.28	73520	3.50	29500	2.15	14980	.64	4625	.85	5670	1.45	9255	.65	4670	1.88	12670
3,	1.48	9470	2.78	20755	17.19	322895	3.28	26530	5.65	62555	3.37	27745	2.03	13950	.66	4715	.91	5985	1.15	7330	.55	4215	1.85	12415
4,	1.42	9340	2.44	17550	16.74	310230	3.08	23920	5.18	54695	4.20	39500	1.91	12920	.59	4390	.86	5720	1.15	7330	.53	4130	1.86	12500
5,	1.48	9470	2.61	19125	15.09	266285	2.95	22480	5.38	57990	3.85	34475	1.81	12085	.56	4260	.86	5720	1.15	7330	.63	4575	1.85	12415
6,	1.50	9610	2.59	18940	12.84	210370	2.81	21050	5.51	60170	3.66	31740	1.73	11425	.54	4170	.98	6365	1.06	6810	.63	4575	1.03	6645
7,	1.75	11590	2.09	14465	11.52	179550	2.78	20755	5.10	53100	3.77	33315	1.59	10300	.52	4085	1.26	7985	.99	6420	.65	4670	1.27	8045
8,	2.00	13690	3.59	30760	12.39	199470	2.58	18845	4.58	45340	3.60	30900	1.57	10150	.50	3995	1.46	9325	.94	6150	.81	5460	1.26	7985
9,	2.56	18660	4.35	41775	12.23	195690	2.55	18565	4.16	38920	3.35	27475	1.57	10150	.66	4715	1.41	8970	.85	5670	.91	5985	1.35	8565
10,	3.10	24150	5.22	55350	10.07	147485	2.46	17730	3.99	36460	3.45	28825	1.55	9995	.63	4575	1.33	8430	.78	5310	.85	5670	1.28	8110
11,	2.82	21150	5.68	63070	8.41	113880	2.33	16555	3.98	36320	4.07	37615	1.45	9255	.76	5205	1.14	7270	.75	5155	.82	5515	1.55	9995
12,	2.50	18100	5.20	55620	7.13	89070	2.28	16115	3.71	32445	4.78	48440	1.37	8700	.85	5670	1.14	7270	.73	5055	.75	5155	2.05	14120
13,	2.35	16735	5.43	58825	6.27	73340	2.22	15585	3.47	29095	5.35	57490	1.35	8565	.90	5930	1.11	7095	.63	4575	.87	5775	2.75	20465
14,	2.28	16115	5.39	58155	5.67	62895	2.16	15065	3.26	26260	5.12	53725	1.33	8430	.86	5720	1.28	8110	.61	4480	1.15	7330	2.89	21860
15,	2.20	15410	5.57	61190	5.47	59495	2.08	14380	3.01	23115	4.86	49650	1.27	8045	.74	5105	1.38	8765	.58	4345	1.75	11590	2.92	22170
16,	2.46	17730	5.39	58155	5.19	54860	1.98	13520	2.85	21455	4.52	44410	1.39	8830	.68	4810	1.26	7985	.55	4215	1.77	11755	2.00	13690
17,	2.36	16825	5.51	60170	4.89	50100	1.98	13520	2.69	19885	5.31	56825	1.41	8970	.65	4670	1.19	7565	.55	4215	1.63	10620	2.08	14380
18,	2.28	16115	6.09	70175	4.53	44565	2.35	16735	2.58	18845	6.57	78660	1.28	8110	.56	4260	.96	6255	.49	3955	1.63	10620	2.17	15150
19,	2.25	15850	5.43	58825	4.29	40850	2.91	22065	2.44	17550	6.51	77580	1.38	8765	.56	4260	.86	5720	.47	3875	1.53	9840	2.38	17000
20,	2.68	19790	5.03	52280	4.07	37615	4.21	39650	2.38	17000	5.65	62555	1.35	8365	.56	4260	.80	5410	.54	4170	1.47	9395	2.25	15850
21,	3.10	24150	4.78	48440	3.92	35480	5.32	56990	2.35	16735	5.19	54860	1.27	8045	.56	4260	.73	5055	.52	4085	1.44	9185	1.98	13520
22,	*10.70	161110	5.89	66690	4.25	40250	5.36	57655	2.44	17550	4.57	45185	1.17	7445	.64	4625	.69	4860	.51	4040	1.37	8700	1.83	12250
23,	12.42	200190	6.97	86035	5.19	54860	5.38	57990	2.47	17825	4.07	37615	1.09	6980	.59	4390	.60	4435	.52	4085	1.35	8565	2.07	14295
24,	10.85	164435	6.13	70880	5.53	60510	5.46	59330	2.46	17730	3.61	31040	1.00	6475	.60	4435	.58	4345	.51	4040	1.30	8230	2.13	14810
25,	8.50	115650	5.01	51960	5.36	57655	9.50	136910	3.16	24930	3.21	25585	.96	6255	.56	4260	.56	4260	.57	4300	1.26	7985	2.07	14295
26,	6.80	82860	4.59	45495	5.39	58155	†14.78	258435	3.89	35055	2.89	21860	.89	5880	.50	3995	.54	4170	.63	4575	1.21	7685	2.17	15150
27,	5.74	64100	4.40	42550	5.39	58155	14.88	260965	5.10	53400	2.63	19315	.80	5410	.46	3830	.78	5310	.56	4260	1.20	7625	2.33	16555
28,	4.94	50870	6.06	69650	5.27	56170	11.33	175260	5.68	63070	2.58	18845	.97	6310	.44	3750	1.09	6980	.62	4530	1.25	7925	2.35	16735
29,	4.40	42550	------	------	4.80	50100	8.83	122850	5.36	57655	2.47	17825	.89	5880	.42	3670	1.18	7505	.63	4575	1.47	9395	2.44	17550
30,	3.78	33460	------	------	4.44	43170	7.20	90400	4.70	47200	2.38	17000	.80	5410	.36	3440	1.65	10780	.63	4575	1.81	12085	2.36	16825
31,	3.60	30900	------	------	4.03	37035	------	------	4.16	38920	------	------	.71	4955	.32	3295	------	------	.59	4390	------	------	2.50	18100

*Maximum 13 feet at 6 to 8 A. M.=214300 sec. ft.
†Maximum 15.7 feet at 5 to 8 P. M.=284160 sec. ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.18	25190	5.45	59160	4.13	38485	7.12	88880	4.02	36890	1.87	12584	1.65	10780	0.62	4529	5.66	62726	2.58	18844	3.23	25855	3.18	25190
2,	3.94	35760	4.93	50715	4.47	43635	6.02	68950	3.82	34040	1.80	12000	1.55	9995	0.61	4482	4.88	49950	4.28	40700	3.06	23690	3.15	24800
3,	4.58	45340	4.10	38050	3.82	34040	5.26	56004	3.78	33460	1.79	11918	1.40	8900	0.88	5826	3.93	35620	6.68	80656	2.97	22688	3.33	27205
4,	6.64	79928	3.80	33750	3.69	32160	4.72	47510	3.66	31740	1.77	11754	1.32	8364	1.42	9042	3.12	24410	7.68	99592	2.87	21657	3.24	25990
5,	8.29	111513	3.38	27880	3.35	27475	4.61	45805	3.65	31600	1.78	11836	1.22	7746	1.38	8700	2.62	19220	5.71	63582	2.86	21556	3.08	23920
6,	6.64	79928	3.21	25585	3.09	24035	5.02	52120	3.57	30480	1.76	11672	1.13	7212	1.05	6755	2.32	16458	4.91	50405	2.80	20950	2.94	22376
7,	5.52	66340	2.70	19930	2.86	21556	5.87	66341	3.34	27340	1.81	12084	1.09	6979	0.99	6420	2.33	16557	4.38	42240	2.90	21960	2.78	20746
8,	4.84	49550	2.68	19770	2.69	19885	7.97	105218	3.09	24035	1.82	12167	1.09	6979	1.10	7035	2.64	19410	4.14	38630	3.08	23920	2.65	19505
9,	4.02	36890	2.60	19030	2.55	18565	8.96	124850	2.92	22168	1.78	11836	1.03	6643	1.00	6475	2.79	20853	4.50	44100	3.29	26665	2.56	18658
10,	3.73	32735	2.51	18193	2.44	17548	8.38	112695	2.76	20562	1.87	12584	0.94	6148	0.90	5930	3.81	33895	4.41	42705	3.27	26395	2.51	18193
11,	3.80	33750	2.38	17062	2.61	19125	7.33	92870	2.64	19410	2.04	14054	0.93	6094	0.78	5309	6.25	72990	4.21	39650	3.30	26800	2.54	18472
12,	3.47	29095	2.40	17180	2.93	22272	6.75	81940	2.58	18844	2.00	13690	0.91	5984	0.69	4858	5.39	58154	3.89	35055	3.22	25720	2.58	18844
13,	3.38	27880	2.51	18193	3.44	28690	6.07	69825	2.40	17732	2.04	14034	0.89	5878	0.61	4482	4.41	42705	3.62	31180	3.10	24150	2.68	19790
14,	4.32	41310	2.59	18937	4.06	37470	5.62	62042	2.37	16913	2.59	18937	0.87	5774	0.57	4303	3.88	34910	3.41	28285	3.28	26530	2.84	21354
15,	7.08	88120	2.91	22064	4.41	42705	5.47	59496	2.24	15762	3.83	34185	0.82	5514	0.57	4303	3.58	30620	3.26	26260	3.34	27340	3.19	25320
16,	11.27	173902	3.05	23575	4.64	46270	6.05	69475	2.14	14804	4.38	42240	0.93	6094	0.52	4083	4.32	41310	3.09	24035	3.26	26260	4.18	39210
17,	8.98	125250	3.05	23575	4.89	50100	6.43	76161	2.10	14550	4.01	36745	1.03	6643	0.60	4435	4.90	50250	2.88	21758	3.39	28015	5.74	64098
18,	6.86	85976	3.29	26665	4.61	45805	6.21	72286	2.04	14034	3.52	29780	0.99	6420	0.61	4482	5.34	57324	3.30	26800	3.38	27880	6.85	83790
19,	5.49	59832	3.88	34910	4.20	39500	5.59	61530	1.99	13605	3.04	23460	1.07	6867	0.59	4391	4.33	41465	4.42	42860	3.59	30760	6.72	81388
20,	4.79	48595	4.33	41465	3.58	34910	5.37	57822	1.99	13605	2.71	20077	1.02	6587	0.49	3955	3.58	30620	4.75	47975	4.20	39500	6.09	70175
21,	4.31	41155	4.30	41000	3.76	33170	6.48	77046	1.94	13177	2.46	17732	0.94	6148	0.45	3792	3.15	24800	4.75	47975	4.41	42705	5.38	57988
22,	3.93	35620	4.06	37470	3.69	32160	7.27	91760	2.04	14034	2.26	15938	0.87	5774	0.52	4083	2.87	21657	4.58	45340	4.62	35960	4.84	49350
23,	3.60	30900	3.61	31040	3.62	31180	7.52	96488	1.97	13434	2.09	14464	0.88	5826	0.52	4083	2.58	18844	4.65	46425	4.44	43170	4.65	46425
24,	3.42	28420	3.37	27745	3.78	33460	7.39	94010	2.11	14636	1.97	13434	0.95	6202	0.52	4083	2.42	17364	5.38	57988	4.07	37615	5.04	52440
25,	3.09	24035	3.15	24800	4.29	40850	7.11	88090	2.05	14120	1.89	12752	0.93	6094	0.67	4764	2.26	15938	5.35	57490	3.81	33895	5.40	58320
26,	2.88	21758	3.14	24670	4.41	42705	6.40	75630	1.92	13006	1.79	11918	0.90	5930	0.88	5826	2.13	14808	4.90	50250	3.70	32300	5.69	63239
27,	2.72	20174	3.23	25855	4.24	40100	5.68	63068	1.90	12835	1.74	11508	0.85	5670	1.14	7271	2.06	14206	4.62	45960	3.52	29780	5.60	61700
28,	2.62	19220	3.44	28690	5.27	56168	5.11	53562	1.94	13177	1.76	11672	0.82	5514	1.22	7746	1.91	12920	4.22	39800	3.41	28285	5.52	60240
29,	3.04	23460	------	------	9.35	132685	4.64	46270	2.16	15066	1.66	10860	0.72	5006	1.93	13092	1.94	13187	3.86	34620	3.31	26935	5.32	56992
30,	5.16	54372	------	------	9.76	140996	4.32	41310	2.02	13862	1.72	11344	0.71	4955	3.88	34910	2.27	16026	3.58	30620	3.22	25720	5.02	52120
31,	5.99	68426	------	------	8.40	113680	------	------	1.97	13434	------	------	0.69	4858	5.30	56660	------	------	3.33	27205	------	------	4.78	48440

ESTIMATED MONTHLY DISCHARGE OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY.

(Drainage area, 23885 square miles.)

MONTH	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1891.					
January,	138330	21250	70933	2.970	3.424
February,	369980	59665	146769	6.145	6.399
March,	163320	45185	96935	4.058	4.679
April,	121650	34185	78157	3.272	3.650
May,	30620	13690	19315	0.809	0.933
June,	68080	13005	25182	1.054	1.176
July,	39950	12250	21613	0.905	1.043
August,	75280	13690	29916	1.252	1.443
September,	45185	11590	23532	0.985	1.099
October,	45185	10225	18595	0.779	0.898
November,	72400	13690	33457	1.401	1.563
December,	131680	29500	62064	2.598	2.995
The year,	369980	10225	52206	2.183	29.303
1892.					
January.	213560	14380	79080	3.311	3.817
February,	47665	10940	22147	0.927	1.000
March,	209390	18100	52000	2.177	2.510
April,	250665	25060	82125	3.438	3.836
May,	118250	21250	65466	2.741	3.160
June,	197330	26125	65437	2.740	3.057
July,	45185	9040	82764	3.465	3.995
August,	37615	12250	18736	0.784	0.904
September,	22170	6920	11335	0.475	0.530
October,	9040	3995	5877	0.246	0.284
November,	30620	3995	10930	0.458	0.511
December,	38775	6040	16183	0.677	0.780
The year,	250665	3995	42673	1.787	24.384
1893.					
January,	21250	13690	15742	0.659	0.760
February,	176390	19695	54495	2.282	2.376
March,	248420	18100	96106	4.024	4.639
April,	161550	52920	103046	4.314	4.813
May,	298100	31880	93159	3.900	4.496
June,	31880	10225	18698	0.783	0.873
July,	16555	6040	10398	0.435	0.501
August,	23920	3330	5562	0.233	0.269
September,	41310	9610	18931	0.793	0.884
October,	55510	7925	18609	0.779	0.898
November,	31880	10225	15607	0.653	0.728
December,	118250	13690	39761	1.665	1.919
The year,	298100	3330	40843	1.710	23.156

ESTIMATED MONTHLY DISCHARGE OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY.

(Drainagé area, 23885 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1894.					
January,	54211	17270	26666	1.116	1.287
February,	65130	13690	31007	1.298	1.352
March,	189500	24930	69287	2.901	3.344
April,	139965	20465	64853	2.715	3.029
May,	575910	16555	99307	4.158	4.794
June,	134895	17270	49511	2.073	2.313
July,	18845	6475	10105	0.423	0.488
August,	10860	3630	6561	0.275	0.317
September,	61020	3055	16948	0.709	0.791
October,	59665	7925	25501	1.068	1.232
November,	95340	18100	45118	1.889	2.108
December,	70880	16555	34463	1.443	1.664
The year,	575910	3055	39944	1.672	22.719
1895.					
January,	111710	23000	48775	2.042	2.354
February,	82860	21250	52034	2.179	2.269
March,	152410	50250	77545	3.247	3.743
April,	225910	29500	85591	3.583	3.997
May,	39950	15850	24823	1.039	1.198
June,	29500	5155	10944	0.458	0.511
July,	22170	3670	9345	0.391	0.451
August,	8430	3330	5160	0.216	0.249
September,	10225	3670	5159	0.216	0.241
October,	4345	2480	3199	0.134	0.154
November,	21250	2925	6004	0.251	0.280
December,	61190	5155	18453	0.773	0.891
The year,	225910	2480	28919	1.211	16.338
1896.					
January,	140175	23000	51758	2.167	2.498
February,	197330	16555	52943	2.217	2.391
March,	197330	16555	63647	2.665	3.072
April,	248420	26125	89941	3.766	4.202
May,	23000	7445	12741	0.533	0.614
June,	46425	9040	19153	0.802	0.895
July,	39950	10225	15407	0.645	0.743
August,	45185	3330	14454	0.605	0.697
September,	7445	3055	4049	0.169	0.189
October,	131680	9610	33973	1.422	1.639
November,	143485	12250	35145	1.471	1.641
December,	38775	8430	21564	0.903	1.041
The year,	248420	3055	34565	1.447	19.622
1897.					
January,	31880	9610	18722	0.784	0.904
February,	100370	23000	45240	1.894	1.972
March,	174580	26125	87576	3.666	4.227
April,	131680	25060	54557	2.284	2.548
May	100370	23920	52342	2.191	2.526
June,	29500	9610	17739	0.743	0.829
July,	42550	6475	11317	0.474	0.546
August,	39950	7445	15217	0.637	0.734
September,	15850	4345	6735	0.282	0.314
October,	11590	3995	5847	0.245	0.282
November,	49050	4765	21494	0.896	1.000
December,	105220	18100	45384	1.900	2.190
The year,	174580	3995	31847	1.333	18.072

ESTIMATED MONTHLY DISCHARGE OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY.

(Drainage area, 23885 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1898.					
January,	152410	12920	57587	2.411	2.779
February,	105025	19600	51084	2.139	2.227
March,	274995	27205	90211	3.777	4.354
April,	148760	23000	52576	2.201	2.456
May,	82860	35200	57149	2.393	2.758
June,	39950	10860	19984	0.836	0.933
July,	15065	4715	8008	0.335	0.386
August,	55510	8970	25727	1.077	1.242
September,	23000	5155	11269	0.472	0.526
October,	108360	4715	32158	1.346	1.552
November,	116650	18100	40291	1.687	1.882
December,	98620	12920	34067	1.426	1.644
The year,	274995	4715	40009	1.675	22.739
1899.					
January,	101920	20465	43206	1.809	2.086
February,	121650	12920	45038	1.886	1.964
March,	209390	39950	100248	4.197	4.840
April,	116650	29500	65222	2.731	3.047
May,	52760	18100	25083	1.050	1.211
June,	18845	6475	11649	0.488	0.545
July,	11590	5155	7817	0.327	0.377
August,	35200	3630	7215	0.302	0.348
September,	12250	4345	6369	0.267	0.298
October,	6920	2780	4016	0.168	0.194
November,	42550	3995	18881	0.790	0.881
December,	78300	9610	31069	1.301	1.500
The year,	209390	2780	30484	1.276	17.291
1900.					
January,	185880	10860	56367	2.360	2.721
February,	166900	12250	63082	2.641	2.750
March,	212330	23000	66915	2.802	3.230
April,	89070	35200	56051	2.347	2.619
May,	35200	13005	19318	0.809	0.933
June,	19695	7445	13352	0.559	0.624
July,	9610	5155	7094	0.297	0.342
August,	9610	2810	4998	0.209	0.241
September,	7445	2330	3641	0.152	0.169
October,	7925	2480	4225	0.177	0.204
November,	210370	3995	24375	1.020	1.138
December,	90590	13690	35909	1.503	1.733
The year,	212330	2330	29611	1.240	16.704
1901.					
January,	29500	7390	14246	0.596	0.687
February,	35200	11590	19956	0.835	0.869
March,	207190	10860	82221	3.442	3.968
April,	223685	46425	105212	4.405	4.914
May,	231835	28285	63888	2.675	3.084
June,	199235	23920	54903	2.300	2.566
July,	23920	9610	13699	0.574	0.662
August,	121650	7925	32783	1.372	1.581
September,	52760	10860	22000	0.921	1.027
October,	19600	8970	13382	0.560	0.646
November,	56825	6475	14742	0.617	0.689
December,	443790	15065	75944	3.179	3.665
The year,	443790	6475	42748	1.790	24.358

ESTIMATED MONTHLY DISCHARGE OF SUSQUEHANNA RIVER, AT HARRISBURG. DAUPHIN COUNTY.

(Drainage area, 23885 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1902.					
January,	141820	13690	36430	1.525	1.758
February,	134895	13690	46402	1.943	2.023
March,	521820	31740	165037	6.910	7.966
April,	250415	20465	69313	2.902	3.238
May,	21250	10860	15530	0.650	0.749
June,	23000	7925	13047	0.546	0.609
July,	111710	24930	68096	2.851	3.287
August,	69475	7925	26510	1.110	1.230
September,	52760	5565	11518	0.482	0.538
October,	65300	15850	36012	1.508	1.739
November,	58320	10860	20957	0.877	0.979
December,	201150	17270	64179	2.687	3.098
The year,	521820	5565	47753	1.999	27.264
1903.					
January,	103470	15850	37106	1.553	1.791
February,	248420	36320	94902	3.973	4.137
March,	307180	58320	138651	5.805	6.692
April,	203315	29500	81980	3.432	3.829
May,	28285	9610	14491	0.607	0.700
June,	85850	9610	31781	1.330	1.484
July,	89070	16555	36960	1.547	1.783
August,	126655	15065	29592	1.239	1.429
September,	147910	12250	35214	1.474	1.644
October,	168930	8970	53246	2.229	2.570
November,	114860	16555	31351	1.313	1.465
December,	61620	6475	22724	0.951	1.096
The year,	307180	6475	50666	2.121	28.620
a1904.					
January,	------------	15065	30400	1.280	1.480
February,	------------	28285	38500	1.620	1.750
March,	436060	45030	102000	4.280	4.930
April,	210860	26935	73936	3.095	3.453
May,	95150	18660	40885	1.712	1.973
June,	56660	12085	28994	1.214	1.354
July,	51180	10620	18076	0.757	0.873
August,	16555	7210	10587	0.445	0.511
September,	15240	6365	8708	0.364	0.406
October,	37470	7505	15329	0.642	0.740
November,	14380	9540	10979	0.460	0.513
December,	133690	5615	16663	0.698	0.805
The year,	436060	5615	32921	1.380	18.788
1905.					
January,	143900	21960	53211	2.228	2.569
February,	48750	29500	37961	1.589	1.655
March,	282315	28150	115768	4.847	5.588
April,	111710	26125	50508	2.115	2.359
May,	25415	13360	18830	0.788	0.909
June	72110	12000	26993	1.130	1.261
July,	24800	10380	16426	0.688	0.793
August,	71230	12415	23838	0.998	1.151
September,	50250	12000	25410	1.064	1.187
October,	51025	10380	23300	0.976	1.125
November,	21960	11180	15594	0.653	0.728
December,	194530	17180	58204	2.437	2.810
The year,	282315	10380	38838	1.626	22.135

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a January 24 to March 8 several ice gorges, causing backwater. Estimated from McCalls Ferry by taking 89 per cent. thereof.

ESTIMATED MONTHLY DISCHARGE OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY.

(Drainage area, 23885 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1906.					
January,	128665	23000	45857	1.920	2.214
February,	45650	12000	21205	0.888	0.925
March,	150260	16290	42697	1.788	2.062
April,	172320	30900	95563	4.001	4.464
May,	90400	14120	25546	1.070	1.234
June,	82860	16735	32195	1.348	1.504
July,	28150	11180	15017	0.629	0.725
August,	32300	10380	16379	0.686	0.791
September,	18100	5930	9550	0.400	0.446
October,	53400	6475	17471	0.731	0.843
November,	39500	12835	20947	0.877	0.979
December,	45650	14550	26227	1.098	1.266
The year,	172320	5930	30721	1.286	17.453
1907.					
January,	143900	24150	76384	3.198	3.687
February,	66860	19980	41626	1.743	1.816
March,	221710	26800	88111	3.690	4.254
April,	90400	23000	38969	1.632	1.821
May,	61700	17180	34045	1.425	1.643
June,	47200	14550	24525	1.027	1.146
July,	32300	8900	16305	0.683	0.787
August,	9610	4435	6392	0.268	0.309
September,	38050	3995	15934	0.667	0.744
October,	36600	12000	19367	0.811	0.935
November,	82860	19980	37291	1.561	1.741
December,	161110	15410	65211	2.730	3.147
The year,	221710	3995	38680	1.620	22.030
1908.					
January,	101920	17180	45489	1.904	2.195
February,	264000	8900	60624	2.538	2.737
March,	290000	34475	128455	5.378	6.201
April,	141820	33750	59410	2.487	2.775
May,	167800	32300	84777	3.549	4.092
June,	53400	9610	19789	0.828	0.924
July,	24150	6475	11225	0.470	0.542
August,	10380	4905	6917	0.290	0.334
September,	7035	2895	3585	0.150	0.167
October,	10380	3590	4986	0.209	0.241
November,	8900	3590	5628	0.236	0.264
December,	12000	3220	6529	0.273	0.315
The year,	290000	2895	36451	1.526	20.787
1909.					
January,	133690	5410	30813	1.290	1.487
February,	214399	18100	82972	3.474	3.617
March,	98040	23000	49990	2.093	2.413
April,	172320	41000	66570	2.787	3.110
May,	290000	18100	70835	2.966	3.420
June,	47200	16290	29773	1.246	1.390
July,	17180	5930	8151	0.341	0.393
August,	5930	3590	4666	0.195	0.225
September,	4435	3220	3718	0.156	0.174
October,	5410	2895	4334	0.181	0.209
November,	4905	3590	3995	0.167	0.187
December,	23000	2895	9809	0.411	0.474
The year,	290000	2895	30468	1.276	17.099

ESTIMATED MONTHLY DISCHARGE OF SUSQUEHANNA RIVER, AT HARRISBURG, DAUPHIN COUNTY.

(Drainage area, 23885 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1910.					
January,	214300	9040	40396	1.691	1.949
February,	86035	14465	48036	2.011	2.094
March,	322895	35480	112716	4.719	5.441
April,	284160	13520	56366	2.360	2.633
May,	77580	16735	38473	1.611	1.857
June,	78660	17000	39110	1.637	1.827
July,	16290	4955	8946	0.374	0.431
August,	5930	3295	4454	0.186	0.214
September,	10780	4170	6598	0.276	0.308
October,	10620	3875	5281	0.221	0.255
November,	12085	4130	7442	0.312	0.348
December,	22170	6645	14090	0.590	0.680
The year,	322895	3295	31826	1.332	18.037
1911.					
January,	173902	19220	52781	2.21	2.548
February,	59160	17002	28463	1.19	1.239
March,	140996	17548	43270	1.81	2.087
April,	124850	41310	73322	3.07	3.425
May,	36890	12835	19430	0.81	0.934
June,	42240	10860	16641	0.70	0.781
July,	10780	4858	6567	0.27	0.311
August,	56660	3792	8264	0.35	0.404
September,	72990	12920	30974	1.30	1.450
October,	99592	21758	42870	1.79	2.064
November,	45960	20950	28822	1.21	1.350
December,	83790	18193	41173	1.72	1.983
The year,	173902	3792	32715	1.37	18.576

YELLOW BREECHES CREEK.

DESCRIPTION OF BASIN.

Yellow Breeches creek, a tributary of the lower Susquehanna river, drains an area of approximately 225 square miles. Rising in the southwestern corner of Cumberland county, it follows a northeasterly direction through the rich, agricultural region of the Cumberland Valley, to its mouth in the Susquehanna river at New Cumberland, the total length being approximately 50 miles. Its course is winding, particularly near its mouth, and its slope becomes less rapid as the river is approached. There are numerous small tributaries rising in the well timbered sandstone hills, which parallel the entire watershed on the south. The creek follows closely, throughout its long and narrow watershed, the foot of these hills, while on the north the valley is wide and rolling, being underlain with limestone, and producing numerous copious springs, notably Boiling Springs, which are by far the largest in the State, maintaining a continuous flow of over 20,000,000 gallons per 24 hours. In the entire valley there are, owing to the presence of this limestone area, only a few small tributaries entering from the north. In the drainage basin lie many small villages, several of which obtain water supplies from the creek and its tributaries. Yellow Breeches creek is used quite extensively by grist mills for power purposes, and its dry weather flow maintained by the limestone springs is remarkably large.

The mean annual precipitation over the greater portion of the watershed is from 35 to 40 inches, the balance receiving from 40 to 45 inches.

The discharge has been measured since March 22, 1909, at Olmstead Mills, 3 miles above the mouth.

SUSQUEHANNA BASIN—STATION NO. 24.

YELLOW BREECHES CREEK AT OLMSTEDS MILL.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania on March 22, 1909, at a single span, through-truss steel, highway bridge, just below Lambert's Mill, about one mile south of White Hill Station on the Cumberland Valley Railroad. It was discontinued on October 31, 1909, and re-established January 22, 1910.

The channel above the station is straight for 200 feet to a wooden mill dam four feet high, while below the station the channel is straight for 75 feet, when there is a short bend to the right. Both banks are high and do not overflow. The bed of the creek is fairly permanent, and there is but one channel at all stages. Water runs over the dam continuously.

Discharge measurements are taken from the downstream side of the bridge, the initial point for soundings being the downstream side of the top edge of the bridge seat of the left abutment.

A standard chain gage is bolted to the bottom chord eyebar in the fourth panel from the right abutment, downstream side. The length of chain from bottom of weight to center of marker is 15.06 feet. The elevation of zero is arbitrary datum. Bench mark No. 1 is top of bridge seat, right abutment, outer downstream corner, elevation 13.62 feeet above zero of gage. The gage is read twice daily by B. G. Lambert.

This stream has a remarkably high dry weather flow on account of the limestone springs on its watershed.

Since the establishment of this station, 22 discharge measurements have been taken.

DISCHARGE MEASUREMENTS OF YELLOW BREECHES CREEK, AT OLMSTED'S MILL, CUMBERLAND COUNTY, PENNA.

(Drainage area, 223 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1908.							
1.	Sept. 14,	Gannett & Langenheim,	131	255	0.86	0.65	219	Reference msmt.
	1909.							
2.	Mar. 19.	Grant & Langenheim,	126	326	1.10	1.72	358	
3.	April 16,	Grant,	126	351	1.25	1.80	439	

DISCHARGE MEASUREMENTS OF YELLOW BREECHES CREEK AT OLMSTED'S MILL, CUMBERLAND COUNTY, PENNA.

(*Drainage area 223 square miles.*)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1910.							
4.	Jan. 21,	Langenheim & Warlow,	126	841	2.39	5.48	2109	Surface msmt.
5.	Jan. 22,	Langenheim & Warlow,	126	990	3.70	6.81	3691	Surface msmt.
6.	Jan. 22,	Langenheim & Warlow,	126	867	3.11	5.88	2690	Surface msmt.
7.	Jan. 22,	Langenheim & Warlow,	126	830	2.42	5.33	2014	Surface msmt.
8.	Jan. 28,	Gannett & Langenheim,	125	218	1.08	1.18	239	
9.	Feb. 22,	Ryder & Warlow,	126	680	2.33	4.07	1536	
10.	Feb. 22,	Ryder & Warlow,	126	727	2.68	4.72	1886	
11.	Feb. 23,	Langenheim & Warlow,	126	589	2.23	3.55	1320	
12.	Mar. 1,	Warlow,	126	618	2.54	2.95	1567	0.6 msmt.
13.	June 11,	Gannett & Langenheim,	126	405	1.56	2.22	633	
14.	Nov. 9,	Reckord,	123	232	0.67	0.82	154	Large Price meter. Surface msmt.
	1911.							
15.	Dec. 12,	Reckord & Boehringer,	124	268	0.71	1.14	189	
16.	Dec. 18,	Reckord,	126	328	1.01	1.48	330	
17.	Dec. 23,	Reckord,	126	355	1.24	1.79	440	
18.	Dec. 27,	Langenheim,	126	384	1.28	1.93	493	
	1912.							
19.	Mar. 15.	Langenheim,	126	975	3.57	6.78	3477	Surface msmt.
20.	April 27,	Reckord & Boehringer,	126	354	1.40	1.87	496	Surface msmt.
21.	May 8	Reckord & Boehringer,	126	384	1.51	2.11	582	Surface msmt.
22.	Sept. 25,	Reckord,	126	480	1.76	2.88	844	Surface msmt.

DISCHARGE TABLE FOR YELLOW BREECHES CREEK AT OLMSTED'S MILL, CUMBERLAND COUNTY, FROM MARCH 22, 1909, TO DECEMBER 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.50	130	2.00	520	.50	1225	5.00	2050	.60	3365
.60	135	.10	565	.60	1275	.10	2115	.70	3460
.70	145	.20	610	.70	1330	.20	2185	.80	3555
.80	155	.30	655	.80	1385	.30	2255	.90	3650
.90	170	.40	700	.90	1440	.40	2325	7.00	3750
1.00	185	.50	745	4.00	1495	.50	2400	.10	3850
.10	205	.60	790	.10	1550	.60	2480	.20	3950
.20	230	.70	835	.20	1605	.70	2560	.30	4055
.30	255	.80	880	.30	1605	.80	2640	.40	4160
.40	285	.90	925	.40	1715	.90	2725	.50	4270
.50	320	3.00	975	.50	1770	6.00	2815	.60	4380
.60	355	.10	1025	.60	1825	.10	2905	.70	4495
.70	395	.20	1075	.70	1880	.20	2995	.80	4610
.80	435	.30	1125	.80	1935	.30	3085	.90	4730
.90	475	.40	1175	.90	1990	.50	3175	8.00	4850
						.50	3270		

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YELLOW BREECHES CREEK, AT OLMSTED'S MILL, CUMBERLAND COUNTY, PENNA.

1909.	MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	-----	-----	1.42	292	1.90	475	1.05	195	1.06	197	.77	152	.77	152	.72	147
2,	-----	-----	1.40	285	1.80	435	1.08	201	.96	179	.79	154	79	154	.76	151
3,	-----	-----	1.36	273	1.60	355	1.02	189	.96	179	.82	158	.84	161	.76	151
4,	-----	-----	1.30	255	1.60	355	1.08	201	.96	179	.82	158	.77	152	.76	151
5,	-----	-----	1.35	270	1.40	285	1.47	310	.86	164	.80	155	.71	146	.75	150
6,	-----	-----	1.32	261	1.45	302	1.83	447	.96	179	.80	155	.77	152	.82	158
7,	-----	-----	1.35	270	1.40	285	1.40	285	.91	172	.79	154	.80	155	.96	179
8,	-----	-----	1.30	255	1.40	285	1.35	270	.84	161	.77	152	.75	150	.80	155
9,	-----	-----	1.25	242	1.30	255	1.62	363	.84	161	.76	151	.73	148	.83	160
10,	-----	-----	1.12	210	1.35	270	1.63	367	.86	164	.75	150	.84	161	.82	158
11,	-----	-----	1.18	225	1.60	355	1.75	415	.88	167	.75	150	.84	161	.82	158
12,	-----	-----	1.20	230	1.45	302	1.63	367	.91	172	.75	150	.81	156	1.03	191
13,	-----	-----	1.20	230	1.35	270	1.45	302	.96	179	.75	150	.84	161	.97	180
14,	-----	-----	1.95	498	1.30	255	1.62	363	.86	164	.75	150	.77	152	.83	160
15,	-----	-----	2.15	588	1.20	230	1.45	302	.86	164	.73	148	.77	152	.82	158
16,	-----	-----	1.80	435	1.30	255	1.49	316	.88	167	.93	174	.85	162	.74	149
17,	-----	-----	1.60	355	1.40	285	1.50	320	.86	164	.94	176	.91	172	.67	142
18,	-----	-----	1.60	355	1.20	230	1.45	302	.76	151	1.04	193	.93	174	.62	137
19,	-----	-----	1.60	355	1.20	230	1.45	302	.86	164	.90	170	.75	150	.87	166
20,	-----	-----	1.65	375	1.05	195	1.20	230	.80	155	.85	162	.73	148	.68	143
21,	-----	-----	2.05	542	1.25	242	1.15	218	.84	161	.81	156	.67	142	.76	151
22,	-----	-----	2.05	542	1.40	285	1.15	218	.81	156	.75	150	.66	141	1.49	316
23,	1.58	348	2.00	520	1.40	285	1.07	199	.98	182	.80	155	.65	140	.90	170
24,	1.49	316	2.10	565	1.32	261	1.20	230	.86	164	.79	154	.71	146	.96	179
25,	1.72	403	1.90	475	1.15	218	1.13	212	.86	164	.79	154	.64	139	.96	179
26,	1.75	415	1.85	455	1.15	218	1.07	199	.84	161	.77	152	.71	146	.93	174
27,	1.69	391	1.75	415	1.20	230	1.10	205	.86	164	.85	162	.74	149	.92	173
28,	1.54	334	1.70	395	1.25	242	1.10	205	.86	164	.79	154	.79	154	.84	161
29.	1.62	363	1.60	355	1.20	230	1.15	218	.84	161	.71	146	.70	145	.82	158
30,	1.55	338	1.70	395	1.02	189	1.05	195	.84	161	.87	166	.67	142	.77	152
31,	1.48	313	-----	-----	1.12	210	-----	-----	.84	161	.81	156	-----	-----	.76	151

Station discontinued Oct. 31, 1909.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YELLOW BREECHES CREEK, AT OLMSTED'S MILL, CUMBERLAND COUNTY, PENNA.

1910. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	-----	-----	.99	184	4.11	1556	.97	180	1.75	415	1.27	248	1.17	222	.86	164	.94	176	.71	146	.82	158	.77	152
2,	-----	-----	1.03	191	3.26	1105	.93	174	1.68	387	1.19	228	1.17	222	.85	162	.87	166	.72	147	.77	152	.77	152
3,	-----	-----	1.11	208	2.79	876	.93	174	1.61	359	1.67	383	1.17	222	.83	160	.86	164	.74	149	.80	155	.75	150
4,	-----	-----	1.13	212	2.27	642	.99	184	1.53	330	1.87	463	1.12	210	.81	156	.77	152	.72	147	.82	158	.73	148
5,	-----	-----	1.05	195	2.13	578	1.01	187	1.41	288	1.75	415	1.06	197	.81	156	.72	147	.67	142	.82	158	.72	147
6,	-----	-----	.98	182	1.93	488	.99	184	1.33	264	1.59	352	1.03	191	.81	156	.76	151	.64	139	.73	148	.82	158
7,	-----	-----	.68	143	1.94	493	.97	180	1.32	261	1.48	313	1.01	187	.82	158	.88	167	.63	138	.74	149	.87	166
8,	-----	-----	.98	182	1.81	439	.96	179	1.31	258	1.29	252	1.03	191	.85	162	.84	161	.70	145	.76	151	.88	167
9,	-----	-----	.95	178	1.64	371	.94	176	1.49	316	1.33	264	1.00	185	.91	172	.78	153	.90	170	.82	158	.73	148
10,	-----	-----	.95	178	1.59	352	.92	173	1.45	302	1.43	296	1.00	185	.81	156	.76	151	.78	153	.80	155	.85	162
11,	-----	-----	.85	162	1.51	324	.81	156	1.39	282	1.95	498	1.02	189	.83	160	.75	150	.80	155	.75	150	.83	160
12,	-----	-----	.98	182	1.45	302	.73	148	1.33	264	1.97	506	1.01	187	.79	154	.76	151	.70	145	.76	151	.79	154
13,	-----	-----	.95	178	1.43	296	.93	174	1.31	258	1.86	459	1.22	235	.79	154	.78	153	.76	151	.72	147	.80	155
14,	-----	-----	1.03	191	1.41	288	.71	146	1.27	248	1.69	391	1.09	203	.79	154	.91	172	.77	152	.72	147	.81	156
15,	-----	-----	1.01	187	1.34	267	.85	162	1.23	238	1.55	338	1.01	187	.95	178	.80	155	.69	144	.72	147	.81	156
16,	-----	-----	.98	182	1.33	264	.93	174	1.15	218	1.65	375	.91	172	.82	158	.76	151	.66	141	.78	153	.79	154
17,	-----	-----	1.63	367	1.32	261	1.28	250	1.13	212	3.13	1040	1.21	232	.87	166	.83	160	.80	155	.78	153	*.81	156
18,	-----	-----	2.33	668	1.23	238	1.88	467	1.13	212	2.86	907	1.03	191	.83	160	.76	151	.81	156	.75	150	*.81	156
19,	-----	-----	1.53	330	1.21	232	1.68	387	1.07	199	2.50	745	.92	173	1.07	199	.74	149	.76	151	.72	147	.76	151
20,	-----	-----	1.48	313	1.18	225	1.61	359	1.13	212	2.13	578	.92	173	.99	184	.72	147	.81	156	.03	138	.77	152
21,	-----	-----	2.71	840	1.21	232	1.51	324	1.05	195	1.82	443	.92	173	.89	168	.68	143	.69	144	.65	140	.77	152
22	a5.73	2584	3.83	1402	1.09	203	1.44	299	1.17	222	1.67	383	.91	172	.76	151	.66	141	.74	149	.70	145	.70	145
23,	2.08	556	3.59	1270	1.08	201	1.44	299	1.18	225	1.61	359	.84	161	.77	152	.66	141	.66	141	.68	143	.98	174
24,	1.73	407	2.13	578	1.14	215	2.13	578	1.15	218	1.53	330	.83	160	.74	149	.68	143	.77	152	.76	151	1.00	185
25,	1.38	279	1.77	423	1.11	208	3.88	1429	2.64	808	1.49	316	.86	164	.69	144	.68	143	.78	153	.74	149	.99	184
26,	1.28	250	1.57	344	1.12	210	3.54	1245	2.98	965	1.35	270	.87	166	.61	136	.80	155	.80	155	.72	147	.92	173
27,	1.18	225	2.15	588	1.09	203	2.71	840	2.61	794	1.25	242	.86	164	.72	147	.78	153	.68	143	.74	149	.77	152
28,	1.15	218	4.25	1632	1.05	195	2.43	714	2.38	691	1.34	267	.99	184	.75	150	.72	147	.74	149	.74	149	.80	155
29,	1.14	215	-----	-----	1.03	191	2.07	552	2.32	664	1.33	264	.87	166	.73	148	.66	141	.80	155	.83	160	.83	160
30,	1.08	201	-----	-----	1.01	187	1.94	493	2.29	650	1.21	232	.89	168	.73	148	.73	148	.80	155	.82	158	.79	154
31,	.98	182	-----	-----	1.00	185	-----	-----	2.28	646	-----	-----	.89	168	.75	150	-----	-----	.80	155	-----	-----	.82	158

Station re-established January 26, 1910.
a Maximum in night approximate 7.5=4270 sec.ft.

* Weight on surface of ice.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YELLOW BREECHES CREEK, AT OLMSTED'S MILL, CUMBERLAND COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	0.84	161	1.02	189	1.02	189	1.19	228	1.32	261	1.10	205	0.70	145	0.71	146	†3.71	1335	1.03	191	1.58	348	1.08	201
2,	0.95	178	0.96	179	1.04	193	1.16	220	1.36	273	1.06	197	0.68	143	0.74	149	1.95	498	1.01	187	1.92	484	1.11	208
3,	1.18	225	1.06	197	0.94	176	1.15	218	1.36	273	1.06	197	0.69	144	1.30	255	1.63	367	0.98	182	1.90	475	1.16	220
4,	1.48	313	1.02	189	1.01	187	1.32	261	1.29	252	1.03	191	0.66	141	*3.24	1095	1.29	252	0.98	182	1.52	327	1.06	197
5,	1.00	185	1.00	185	1.00	185	1.76	419	1.14	215	1.70	395	0.71	146	1.48	313	1.24	240	0.96	179	1.54	334	1.06	197
6,	1.04	193	0.98	182	1.02	189	1.59	352	1.14	215	1.06	197	0.72	147	1.00	185	1.17	222	1.07	199	2.02	529	1.05	195
7,	0.94	176	0.90	170	1.01	187	1.53	330	1.12	210	0.90	170	0.68	143	0.98	182	1.18	225	0.95	178	2.48	736	1.04	193
8,	0.80	155	0.88	167	0.98	182	1.38	279	1.11	208	0.88	167	1.10	205	0.86	164	1.16	220	1.00	185	1.80	435	1.04	193
9,	0.96	179	0.89	168	1.00	185	1.34	267	1.11	208	0.88	167	0.76	151	0.78	153	1.72	403	1.02	189	1.18	225	1.01	187
10,	0.86	164	0.85	162	1.22	235	1.41	288	1.10	205	0.88	167	0.73	148	0.75	150	1.74	411	1.00	185	1.46	306	1.02	189
11,	0.81	156	0.85	162	1.45	302	1.42	292	1.07	199	0.86	164	0.71	146	0.66	141	1.48	313	1.26	245	1.15	218	1.01	187
12,	0.78	153	0.78	153	1.85	455	1.27	248	1.04	193	0.94	176	0.70	145	0.71	146	1.41	288	1.18	225	1.14	215	1.08	201
13,	0.85	162	0.86	164	1.33	264	1.20	230	1.03	191	0.95	178	0.70	145	0.74	149	1.38	279	0.96	179	1.22	235	1.06	197
14,	1.22	235	1.01	187	1.09	203	1.22	235	0.99	184	0.97	180	0.64	139	0.76	151	1.38	279	0.89	168	1.19	228	1.08	201
15,	1.01	187	1.04	193	1.23	238	1.20	230	0.96	179	0.80	155	0.65	140	0.76	151	1.95	498	0.87	166	1.18	225	1.08	201
16,	0.91	172	1.02	189	1.38	279	1.22	235	0.95	178	0.71	146	0.64	139	0.76	151	2.00	520	0.81	156	1.18	225	2.11	570
17,	0.90	170	1.00	185	1.22	235	1.24	240	0.98	182	0.62	137	0.73	148	0.78	153	1.42	292	0.81	156	1.21	232	1.80	435
18,	0.74	149	1.13	212	1.18	225	1.20	230	0.98	182	0.70	145	0.71	146	0.78	153	1.33	264	2.24	628	1.42	292	1.50	320
19,	0.83	160	1.12	210	1.12	210	1.20	230	1.10	205	0.80	155	0.74	149	0.84	161	1.20	230	1.60	355	1.41	288	1.50	320
20,	0.78	153	1.18	225	1.09	203	1.80	435	1.06	197	0.76	151	0.76	151	0.78	153	1.18	225	1.51	324	1.34	267	1.56	341
21,	0.82	158	1.20	230	1.13	212	1.92	484	1.00	185	0.75	150	0.75	150	0.78	153	1.16	220	1.42	292	1.27	248	1.55	338
22,	0.79	154	1.02	189	1.16	220	1.82	443	0.98	182	0.75	150	0.66	141	0.79	154	1.05	195	1.36	273	1.24	240	1.90	475
23,	0.79	154	1.02	189	1.12	210	2.02	529	0.98	182	0.72	147	0.68	143	0.79	154	1.00	185	2.00	520	1.25	242	2.15	588
24,	0.84	161	1.00	185	1.08	201	1.91	480	0.98	182	0.66	141	0.78	153	0.78	153	0.98	182	1.78	427	1.27	248	1.82	443
25,	0.82	158	1.02	189	1.00	185	1.74	411	0.97	180	0.70	145	0.82	158	0.78	153	0.95	178	1.71	399	1.25	242	1.98	511
26,	0.80	155	1.12	210	1.00	185	1.40	285	0.98	182	0.66	141	0.78	153	0.88	167	1.00	185	1.70	395	1.24	240	1.80	435
27,	0.84	161	1.10	205	1.08	201	1.46	306	0.96	179	0.71	146	0.76	151	1.38	279	0.99	184	1.69	391	1.24	240	1.98	511
28,	0.93	174	1.02	189	1.12	210	1.40	285	0.95	178	0.75	150	0.75	150	1.76	419	1.00	185	1.43	296	1.26	245	1.78	427
29,	0.94	176	------	------	1.18	225	1.36	273	0.74	149	0.79	154	0.78	153	1.65	375	1.30	255	1.22	235	1.26	245	1.60	355
30,	1.14	215	------	------	1.28	250	1.31	258	0.86	164	0.75	150	0.77	152	2.03	534	1.28	250	1.20	230	1.25	242	1.54	334
31,	1.02	189	------	------	1.20	230	------	------	0.88	167	------	------	0.70	145	4.61	1830	------	------	1.20	230	------	------	1.60	355

* Maximum 5.6 at 3 A. M.=2480 sec.-ft.

† Maximum 4.52 at 6 A. M.=1781 sec.-ft.

ESTIMATED MONTHLY DISCHARGE OF YELLOW BREECHES CREEK, AT OLMSTED'S MILL, CUMBERLAND COUNTY.

(Drainage area, 223 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
*1909.					
April,	588	210	364	1.632	1.821
May,	475	189	275	1.233	1.422
June,	447	189	272	1.220	1.361
July,	197	151	167	.749	.864
August,	193	146	157	.704	.812
September,	174	139	152	.682	.761
October,	316	137	165	.740	.853
1910.					
January,	4270		†379	†1.700	†1.960
February,	1632	143	418	1.874	1.951
March,	1556	185	382	1.713	1.975
April,	1429	146	366	1.641	1.831
May,	965	195	374	1.677	1.933
June,	1040	228	405	1.816	2.026
July,	235	160	187	.838	.966
August,	199	136	158	.709	.818
September,	176	141	153	.686	.766
October,	170	138	149	.668	.770
November,	160	138	151	.677	.756
December,	185	145	158	.709	.818
The year,	4270	136	273	1.226	16.570
1911.					
January,	313	149	177	.794	.915
February,	230	153	188	.843	.878
March,	455	176	221	.991	1.142
April,	529	218	307	1.377	1.537
May,	273	149	198	.888	1.024
June,	395	137	170	.762	.850
July,	205	139	149	.668	.770
August,	2480	141	280	1.256	1.448
September,	1781	178	313	1.404	1.566
October,	628	156	263	1.179	1.359
November,	736	215	302	1.354	1.510
December,	588	187	314	1.408	1.624
The year,	2480	137	240	1.077	14.623

*Station discontinued Oct. 31, 1909.
†Computed from climatological records at Harrisburg.

BIG SWATARA CREEK.

DESCRIPTION OF BASIN.

Big Swatara creek, a tributary of the Susquehanna river from Schuylkill, Berks, Lebanon and Dauphin counties, drains an approximate area of 565 square miles. Rising in the hills in the southwestern part of Schuylkill county, this stream flows in a general southwesterly direction through a broad, rolling, farming country, well inhabited and largely deforested to its mouth at Middletown, Dauphin county, a distance of about 65 miles. On the headwaters in Schuylkill county lie numerous anthracite coal mines, the culm from which pollutes the entire stream. There are numerous tributaries, the principal being Little Swatara and Quittapahilla creeks. The sub-basins of some of the tributaries are underlain with limestone and numerous strong springs contribute to its flow. The slope is flat and the flow sluggish in its lower portion. The city of Lebanon, and numerous large boroughs and villages lie on the watershed. The main stream and its branches are used to some extent for domestic and industrial supply while numerous mill and power dams cause slack-water for long stretches.

The upper part of the watershed is subject to a mean annual precipitation of from 45 to 50 inches, and the lower portion from 40 to 45 inches.

The discharge has been measured at Jonestown, just above the mouth of Little Swatara creek, since November 19, 1910.

SUSQUEHANNA BASIN—STATION NO. 25.

BIG SWATARA CREEK AT JONESTOWN.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission, in co-operation with the Lebanon Valley Consolidated Water Supply Co., on November 19th, 1910, at a two span, steel, through-truss, highway bridge between Jonestown proper and the Philadelphia and Reading Railroad Station.

For 150 feet above and 200 feet below the station, the channel is straight, with a rift above and pool below. Both banks are low, but the water passes under the bridge at all stages. The bed is composed of gravel, sand and culm. At low stages the velocity under the bridge is slight.

Discharge measurements are taken from the downstream side of the bridge, or by wading during low water. The initial point for soundings is right face of first handrail post on left side of bridge. The stations are painted on the downstream truss.

A chain gage with removable weight and chain, is attached to the floor on the downstream side of the bridge. The length of chain from bottom of weight to center of marker is 23.02 feet. The elevation of zero is arbitrary datum. Bench Mark No. 1 is niche cut in top of corner stone on 16th tier from top of left abutment, downstream face, elevation 8.49 feet above gage datum. The gage is read twice daily by the watchman at the filter plant of the Lebanon Valley Consolidated Water Supply Company.

There is a mill dam about 6 miles above which stores water at night. Little Swatara creek joins the main stream about one mile below the gaging station.

Owing to channel conditions being changed by a pipe line which was placed across the stream a few feet below the station in October, 1911, it has been neceessary to compute two rating tables for this station.

Since the establishment of this station 16 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF BIG SWATARA CREEK, AT JONESTOWN, LEBANON COUNTY, PENNA.

(Drainage area, 190 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec..ft.	
	1908.							
1.	Sept. 30,	Grant,	56	73	0.84	*3.22	61.4	Wading msmt. above highway bridge.
	1910.							
2.	Nov. 1,	Ryder,	58	87	1.66	**3.40	144	Msmt. from temporary bridge opposite filter plant.

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*Measurement referenced—19-87 feet to water surface from top 1st plank in 7th panel of railing from right end of bridge, downstream side. Gage height obtained from reference.

**Measurement referenced—19.98 feet to water surface, same datum as No. 1. Gage height obtained from reference.

DISCHARGE MEASUREMENTS OF BIG SWATARA CREEK AT JONESTOWN, LEBANON COUNTY, PENNA.

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1911.							
3.	May 17,	Langenheim,	180	234	0.92	3.49	216	0.6 msmt.
4.	Aug. 18,	Reckord,	58	143	0.23	3.08	32.9	Surface msmt.
5.	Oct. 23,	Langenheim,	202	729	2.73	6.12	1990	Surface msmt.
6.	Oct. 25,	Langenheim,	192	483	2.02	4.87	978	0.6 msmt.
7.	Oct. 27,	Langenheim,	186	404	1.66	4.45	673	0.6 and 0.5 msmt.
8.	Nov. 1,	Langenheim,	176	306	1.13	3.97	347	0.6 msmt.
9.	Dec. 27,	Reckord & Boehringer,	188	464	2.00	4.79	910	Surface msmt.
	1912.							
10.	Feb. 27,	Reckord,	195	642	2.74	5.71	1757	0.6 msmt.
11.	Mar. 13,	Boehringer,	193	601	2.54	5.46	1529	Surface msmt.
12.	Mar. 15,	Reckord,	219	1384	3.79	9.16	5250	Surface msmt.
13.	Mar. 16,	Boehringer,	203	874	3.54	6.89	3094	Surface msmt.
14.	Mar. 16,	Reckord,	202	818	3.43	6.61	2807	Surface msmt.
15.	June 17,	Reckord & Boehr-	200	759	3.28	6.29	2488	Surface msmt.
		inger,	168	229	0.68	3.47	155	Interg. msmt.

DISCHARGE TABLE FOR BIG SWATARA CREEK, AT JONESTOWN, LEBANON COUNTY, FROM NOVEMBER, 1910, TO OCTOBER 12, 1911.

Gage height.	Discharge	Gage height.	Discharge	Gage height.	Discharge	Gage height.	Discharge	Gage height.	Discharge
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
2.90	10	.80	315	.70	860	.60	1660	.60	2765
3.00	20	.90	365	.80	935	.70	1770	.70	2880
.10	40	4.00	420	.90	1010	.80	1880	.80	2995
.20	70	.10	475	5.00	1090	.90	1990	.90	3110
.30	105	.20	530	.10	1170	6.00	2100	7.00	3230
.40	145	.30	590	.20	1260	.10	2210	.50	3840
.50	185	.40	655	.30	1360	.20	2320	8.00	4440
.60	225	.50	720	.40	1460	.30	2430	.50	5050
.70	270	.60	790	.50	1560	.40	2540	9.00	5650

DISCHARGE TABLE FOR BIG SWATARA CREEK, AT JONESTOWN, LEBANON COUNTY, FROM OCTOBER 13, 1911, TO DECEMBER 31, 1911.

Gage height.	Discharge	Gage height.	Discharge	Gage height.	Discharge	Gage height.	Discharge	Gage height.	Discharge
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
3.00	10	.80	290	.60	765	.30	1360	6.00	2100
.10	30	.90	335	.70	840	.40	1460	.50	2650
.20	60	4.00	385	.80	915	.50	1560	7.00	3230
.30	90	.10	440	.90	995	.60	1660	.50	3840
.40	125	.20	500	5.00	1080	.70	1770	8.00	4440
.50	160	.30	565	.10	1170	.80	1850	.50	5050
.60	200	.40	630	.20	1260	.90	1990	9.00	5650
.70	245	.50	695						

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF BIG SWATARA CREEK, AT JONESTOWN, LEBANON COUNTY, PENNA.

1910. Day.	NOV.		DEC.	
	G H	Dis.	G H	Dis.
1,	------	------	3.19	67
2,	------	------	3.09	38
3,	------	------	3.09	38
4,	------	------	2.99	19
5,	------	------	2.94	14
6,	------	------	3.09	38
7,	------	------	3.11	43
8,	------	------	3.24	84
9,	------	------	3.25	88
10,	------	------	3.09	38
11,	------	------	*3.19	67
12,	------	------	*3.19	67
13,	------	------	*3.19	67
14,	------	------	*3.24	84
15,	------	------	*3.27	94
16,	------	------	*3.41	149
17,	------	------	*3.24	84
18,	------	------	3.21	74
19,	------	------	3.21	74
20,	------	------	3.29	102
21,	2.98	18	3.31	109
22,	3.12	46	3.39	141
23,	3.05	30	3.41	149
24,	3.10	40	3.91	370
25,	3.08	36	5.17	1233
26,	3.10	40	4.69	853
27,	3.06	32	4.49	714
28,	3.08	36	4.24	554
29,	3.16	58	4.19	525
30,	3.22	77	4.59	783
31,	------	------	5.19	1251

*Measurements taken to top of ice.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF BIG SWATARA CREEK AT JONESTOWN, LEBANON COUNTY. PA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.06	1138	3.58	209	3.59	221	4.14	497	3.80	315	5.04	1122	3.11	43	3.00	20	b6.65	2822	3.67	256	3.94	355	3.99	380
2,	5.48	1540	3.60	225	3.68	261	3.95	392	4.65	825	3.81	320	*3.00	20	3.01	22	5.24	1300	6.43	2573	3.86	317	3.86	317
3,	5.60	1660	3.53	197	3.61	230	3.91	370	4.04	442	3.64	243	2.90	10	3.97	404	4.63	811	4.96	1058	3.82	299	3.90	335
4,	5.43	1490	3.57	213	3.66	252	3.93	382	3.91	370	3.58	217	3.10	40	4.30	590	4.33	610	4.46	694	3.75	268	3.95	360
5,	4.63	811	3.84	335	3.49	181	4.46	694	3.77	302	3.52	193	3.03	26	3.80	315	4.09	470	4.21	536	3.72	254	3.81	294
6,	4.42	668	3.63	238	3.52	193	4.21	536	3.75	292	3.67	256	3.01	22	3.60	225	4.31	596	4.01	426	3.79	286	3.74	263
7,	4.17	514	3.62	234	3.55	205	4.12	486	3.68	261	3.62	234	3.19	67	3.41	149	4.01	426	4.18	519	4.52	709	3.70	245
8,	3.94	387	3.72	279	3.58	217	4.06	453	3.66	252	3.48	177	3.37	133	3.40	145	3.82	325	3.94	387	4.01	390	3.74	263
9,	3.94	387	3.66	252	3.46	169	4.03	436	3.70	270	3.35	125	3.14	52	3.39	141	4.14	497	3.83	330	3.88	326	3.78	281
10,	3.73	284	3.63	238	3.67	256	3.99	415	3.64	243	3.34	121	3.09	38	3.29	102	4.44	681	3.73	284	3.82	299	3.75	268
11,	3.78	306	3.62	234	3.88	355	3.89	360	3.64	243	3.28	98	2.99	19	3.30	105	4.15	502	3.80	315	3.80	290	3.74	263
12,	3.72	279	3.48	177	3.76	297	3.81	320	3.52	193	3.48	177	3.01	22	3.16	58	4.82	950	3.78	306	3.79	286	3.71	250
13,	3.94	387	3.74	288	3.69	266	3.73	284	3.54	201	4.20	530	2.99	19	3.17	61	4.25	560	3.67	232	4.24	526	3.63	240
14,	4.29	584	3.77	302	3.68	261	4.07	458	3.47	173	4.24	554	2.96	16	3.17	61	4.01	426	3.61	204	4.04	407	3.62	209
15,	4.47	700	3.82	325	3.82	325	4.36	629	3.47	173	3.72	279	3.71	274	3.16	58	4.92	1026	3.60	200	4.11	446	3.95	360
16,	4.19	525	3.66	252	3.85	340	4.15	502	3.47	173	3.64	243	4.47	700	3.33	117	4.61	797	3.58	192	4.02	396	4.48	682
17,	4.03	436	3.53	197	3.72	279	4.03	436	3.41	149	3.47	173	4.41	662	3.15	55	4.32	603	3.57	188	3.96	365	4.60	765
18,	3.84	335	4.19	525	3.83	330	3.96	398	3.47	173	3.47	173	4.30	590	3.51	189	4.12	486	c6.47	2617	5.20	1260	4.40	630
19,	3.99	415	4.10	475	3.78	306	3.89	360	3.41	149	3.42	153	3.69	225	3.47	173	3.92	376	5.46	1520	5.06	1134	4.24	526
20,	3.79	310	3.90	365	3.81	320	5.02	1106	3.65	248	3.36	129	3.50	185	3.23	80	3.88	355	4.93	1020	4.69	832	4.15	470
21,	3.76	297	3.90	365	3.90	365	5.01	1098	3.50	185	3.30	105	3.44	161	3.10	40	3.77	302	4.82	931	4.50	695	3.98	375
22,	3.69	266	3.69	266	3.93	382	5.06	1138	3.38	137	3.22	77	3.34	121	3.07	34	3.74	288	5.08	1152	4.29	558	4.08	429
23,	3.60	225	3.67	256	3.93	382	4.96	1058	3.35	125	3.18	64	3.27	94	3.06	32	3.65	248	6.22	2342	3.99	380	4.86	936
24,	3.57	213	3.64	243	3.86	345	4.73	882	3.36	129	3.28	98	3.66	252	3.07	34	3.58	217	5.41	1470	4.21	506	4.70	840
25,	3.43	157	3.74	288	3.79	310	4.56	762	3.34	121	3.32	113	3.36	129	3.33	117	3.59	221	4.93	1020	4.26	539	4.60	765
26,	3.57	213	3.79	310	3.75	292	4.35	622	3.30	105	3.28	98	3.19	67	3.53	197	3.49	181	4.63	788	4.06	418	4.32	578
27,	3.53	197	3.80	315	*3.80	315	4.19	525	3,24	84	3.27	94	3.16	58	3.54	201	3.44	161	4.45	662	4.01	390	4.78	900
28,	3.77	302	3.77	302	*5.00	1090	4.07	458	3.25	88	3.25	88	3.14	52	3.63	238	3.42	153	4.30	565	3.96	365	4.49	688
29,	3.68	261	------	------	*4.50	720	3.98	409	3.21	74	3.24	84	3.19	67	5.11	1179	3.83	330	4.16	476	4.22	513	4.32	578
30,	3.73	284	------	------	*4.35	622	3.89	360	3.24	84	3.16	58	3.13	49	5.57	1630	3.58	217	4.08	429	4.00	385	4.21	506
31,	3.52	193	------	------	4.27	572	------	------	3.42	153	------	------	3.10	40	a7.57	3924	------	------	3.96	365	------	------	4.20	500

*Interpolated. A=Max. 8.70 at 5 P. M.=5290 sec ft. B=Max. 7.23 at 7 A. M.=3511 sec. ft.
C=Max. 7.37 at 5 P. M.=3681 sec. ft.

ESTIMATED MONTHLY DISCHARGE OF BIG SWATARA CREEK, AT JONESTOWN, LEBANON COUNTY.

(Drainage area, 190 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1910.					
December,	1251	14	258	1.36	1.568
1911.					
January,	1660	157	509	2.68	3.090
February,	525	177	282	1.48	1.541
March,	----------	169	344	1.81	2.87
April,	1138	284	561	2.95	3.291
May,	825	74	217	1.14	1.314
June,	1122	58	213	1.12	1.250
July,	700	10	137	.72	.830
August,	5290	20	345	1.82	2.098
September,	3511	153	565	2.97	3.314
October,	3681	188	776	4.08	4.708
November,	1260	254	473	2.49	2.778
December,	936	209	468	2.46	2.836
The year,	5290	10	408	2.14	29.137

SUSQUEHANNA BASIN—STATION NO. 26.

SUSQUEHANNA RIVER AT McCALL'S FERRY, PA.

DESCRIPTION OF STATION.

This station was established by the Pennsylvania Water and Power Company on May 17th, 1902, and is located at a narrow and rocky part of the Susquehanna river, about 20 miles above its mouth, and one mile above the village of McCall's Ferry.

The cable from which discharge measurements were made at this station is located about 1 mile above the village of McCall's Ferry, and the discharge measurements were made at two points; namely, Duncan's Island station and the Cable Station.

The two principal gages to which the measurements are referred are gage No. 2, about ¾ of a mile below McCall's Ferry, and gage No. 5, about 2 miles below McCall's Ferry. The datum of each gage has remained constant since its establishment. The gage readings give the elevation of the water surface above sea level direct. Gage No. 2 which is located in the tail race of the power house, was used until February 28, 1906, when operations at the dam caused backwater to affect the relation between discharge and gage heights. All readings since then have been referred to gage No. 5, which is located at the foot of Cully's Falls, entirely out of the direct influence of the dam.

The discharge is affected by ice during severe winters. Conditions of flow are permanent, and an excellent rating table has been developed for gages Nos. 2 and 5.

The dam has caused a change in distribution of flow resulting in change in the relation of gage height to discharge as referred to the Cully's Falls gage. On December 1, 1910, a new gage was established on Face Rock, about 300 feet below the Cullys Falls gage. In addition there has been maintained for several years a gage at Fites Eddy, about 3 miles below the dam. Data subsequent to 1909 is withheld for the present at this station until suitable discharge rating curve can be derived for one of the lower gages.

The following data have been furnished by the United States Geological Survey:

DISCHARGE MEASUREMENTS OF SUSQUEHANNA RIVER, AT McCALL'S FERRY, LANCASTER COUNTY, PENNA.

(Drainage area, 26766 square miles.)

No.	Date.	Hydrographer.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1902.						
1.	**May 17,*--**	Ehle, ------------------	4570	3.70	116.62	16880	Gage No. 2.
2.	**May 24,*--**	do	4340	2.93	115.83	12710	Gage No. 2.
3.	**June 9,*--**	do	3990	2.59	115.30	10330	Gage No. 2.
4.	**June 23,*--**	do	4564	3.17	116.32	14440	Gage No. 2.
5.	**July 14,*--**	do	9180	6.00	121.90	55100	Gage No. 2.
6.	**July 16,*--**	do	7400	5.15	120.12	38100	Gage No. 2.
7.	July 21,*--	do	[illegible]	4.02	117.90	24200	Gage No. 2.
8.	**July 24,*--**	do	11900	8.01	125.10	95300	Gage No. 2.
9.	**July 26,*--**	do	11000	7.41	123.82	81500	Gage No. 2.
10.	**Sept. 3,*-**	do	3800	2.14	114.82	8130	Gage No. 2.
11.	**Sept. 25,*-**	do	3500	1.82	114.32	6370	Gage No. 2.
	1903.						
12.	**Feb. 10,†--**	Anderson, ------------	14300	5.97	123.90	85400	Gage No. 2. Surface measurement.
13.	Mar. 2,†--	do	33800	8.59	135.90	290550	Gage No. 2. Surface measurement.
14.	Mar. 3, --	do	30365	8.23	133.60	250000	Gage No. 2. Surface measurement.
15.	**Mar. 4,†--**	do	23050	7.55	130.00	174060	Gage No. 2. Surface measurement.
16.	**Mar. 5,†--**	do	19000	6.80	127.20	129300	Gage No. 2. Surface measurement.
17.	**Mar. 6,†--**	do	16175	6.41	125.20	104600	Gage No. 2.
18.	**Mar. 7,†--**	do	14780	5.77	124.20	85300	Gage No. 2.
19.	**Mar. 12,†--**	do	22460	7.16	129.40	160600	Gage No. 2.
20.	**Mar. 18,†--**	do	13220	5.84	123.40	77240	Gage No. 2.
21.	**Mar. 25,†--**	do	31220	8.75	134.30	273300	Gage No. 2. Surface measurement.
22.	**Mar. 27,†--**	do	23720	7.38	130.10	175210	Gage No. 2. Surface measurement.
23.	**Mar. 28,†--**	do	19780	6.90	127.60	136400	Gage No. 2. Surface measurement.
24.	**April 8,†--**	do	14060	5.72	123.80	80400	Gage No. 2. Surface measurement.
25.	**April 9,†--**	do	13310	5.75	123.30	76600	Gage No. 2. Surface measurement.
26.	**April 16,†--**	do	26445	7.91	131.50	209200	Gage No. 2. Surface measurement.
27.	**April 18,†--**	do	21350	7.15	128.80	152500	Gage No. 2. Surface measurement.
28.	April 22. --	do	11840	5.62	122.60	66600	Gage No. 2.
29.	**April 25,†--**	do	9400	4.96	120.70	46660	Gage No. 2.
30.	**May 4,†--**	do	5870	4.16	117.85	24400	Gage No. 2.
31.	**May 14,†--**	do	4410	3.63	116.50	16000	Gage No. 2.
32.	**May 23,†--**	do	4120	3.19	115.72	13140	Gage No. 2.
33.	**June 5,†--**	do	[illegible]	3.40	115.17	9810	Gage No. 2.
34.	June 5,†--	do	3850	2.60	115.17	10000	Gage No. 2.
35.	**June 17,†--**	do	8180	4.67	120.00	38200	Gage No. 2.
	1904.						
36.	Mar. 8,†--	do	54500	11.60	146.60	631000	Gage No. 2.
37.	**May 11,†--**	do	7035	4.70	119.00	34400	Gage No. 2. Surface measurement.
38.	**Sept. 29,*-**	Steward, --------------	3717	2.16	114.75	7940	

*Duncan's Run Station.
*Cable Station.

DISCHARGE TABLE FOR SUSQUEHANNA RIVER, AT McCALL'S FERRY, LANCASTER COUNTY, FROM 1902, TO DECEMBER 31, 1905.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
114.00	5160	.90	13040	.60	29140	.40	64000	.50	134100
.10	5560	116.00	13540	.80	30560	.60	66500	128.00	141100
.20	5840	.10	14040	119.00	31900	.80	69000	.50	148300
.30	6200	.20	14560	.20	33300	123.00	71500	129.00	155300
.40	6560	.30	15080	.40	34700	.20	74000	.50	163400
.50	6930	.40	15610	.60	36100	.40	76400	130.00	172500
.60	7310	.50	16150	.80	37500	.60	78900	.50	182800
.70	7700	.60	16690	120.00	39100	.80	81500	131.00	194100
.80	8100	.70	17240	.20	40700	124.00	84200	.50	205800
.90	8500	.80	17800	.40	42400	.20	87000	132.00	217300
115.00	8920	.90	18360	.60	44200	.40	89900	.50	228600
.10	9340	117.00	18930	.80	46100	.60	92800	133.00	240000
.20	9770	.20	20120	121.00	48000	.80	95700	.50	251200
.30	10210	.40	21320	.20	50000	125.00	98600	134.00	262000
.40	10660	.60	22560	.40	52100	.50	105900	.50	273600
.50	11120	.80	23820	.60	54300	126.00	112900	135.00	285300
.60	11580	118.00	25110	.80	56600	.50	119900	.50	297200
.70	12060	.20	26430	122.00	59000	127.00	127000	136.00	309300
.80	12540	.40	27780	.20	61500				

Note:—The above table is applicable only for open channel conditions. It is based on 37 discharge measurements made during 1902-1904 inclusive. It is well defined throughout.

DISCHARGE TABLE FOR SUSQUEHANNA RIVER AT McCALL'S FERRY, LANCASTER COUNTY, FOR 1906.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
101.00	5300	.50	13110	.90	22560	.60	44740	113.00	113700
.10	5740	.60	13720	104.00	23300	.80	46560	.50	120660
.20	6190	.70	14350	.20	24800	107.00	48400	114.00	127800
.30	6650	.80	14990	.40	26320	.50	53000	.50	135000
.40	7120	.90	15640	.60	27860	108.00	57600	115.00	142300
.50	7600	103.00	16300	.80	29420	.50	62300	.50	149600
.60	8090	.10	16960	105.00	31000	109.00	67100	116.00	157000
.70	8600	.20	17640	.20	32600	.50	71960	.50	164500
.80	9120	.30	18320	.40	34240	110.00	77000	117.00	172000
.90	9650	.40	19000	.60	35920	.50	82500	.50	179600
102.00	10200	.50	19700	.80	37640	111.00	88200	118.00	187300
.10	10760	.60	20400	106.00	39400	.50	94300	119.00	202900
.20	11330	.70	21120	.20	41160	112.00	100500	120.00	218800
.30	11910	.80	21840	.40	42940	.50	106980		
.40	12500								

Note:—The above table is applicable only for open channel conditions. It is based on 37 discharge measurements made during 1902-1904. It is well defined above gage height 10.12 feet.

DISCHARGE TABLE FOR SUSQUEHANNA RIVER AT McCALL'S FERRY, LANCASTER COUNTY, FOR 1907-1908.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
100.20	2690	.70	8600	.20	17640	105.00	31000	112.00	100500
.30	2950	.80	9120	.30	18320	.20	32600	113.00	113700
.40	3230	.90	9650	.40	19000	.40	34240	114.00	127800
.50	3530	102.00	10200	.50	19700	.60	35920	115.00	142300
.60	3850	.10	10760	.60	20400	.80	37640	116.00	157000
.70	4190	.20	11330	.70	21120	106.00	39400	117.00	172000
.80	4550	.30	11910	.80	21840	.20	41160	118.00	187300
.90	4930	.40	12500	.90	22560	.40	42940	119.00	202900
101.00	5330	.50	13110	104.00	23300	.60	44740	120.00	218800
.10	5760	.60	13720	.20	24800	.80	46560	121.00	235100
.20	6200	.70	14350	.40	26320	107.00	48400	122.00	251800
.30	6650	.80	14990	.60	27860	108.00	57600	123.00	268900
.40	7120	.90	15640	.80	29420	109.00	67100	124.00	286300
.50	7600	103.00	16300			110.00	77000	125.00	304000
.60	8090	.10	16960			111.00	88300		

Note:—The above table is not applicable for ice or obstructed-channel conditions. It is applicable only to the Cullys Falls gage. It is based on 37 discharge measurements made during 1902-1904 and is well defined above gage height 101.2 feet. Below this gage height the curve is uncertain and may be as much as 10 per cent in error at gage height 100.2 feet.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT McCALL'S FERRY, LANCASTER COUNTY, PENNA.

1902.	JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	116.15	14300	117.50	21940	122.10	60200	114.90	8510	120.50	43300	122.10	60200	117.15	19830
2,	116.15	14300	------	*50000	121.70	55400	114.90	8510	122.60	66500	121.30	51100	117.40	21320
3,	115.80	12550	123.70	80200	121.50	53200	114.80	8100	122.70	67700	120.10	39900	118.45	28120
4,	115.80	12550	123.10	72700	122.20	61500	114.85	8300	122.10	60200	119.60	36000	119.25	33500
5,	115.80	12550	123.15	73350	122.00	59000	114.80	8100	121.50	53200	119.00	31900	119.60	36000
6,	115.35	10430	124.30	88500	121.20	50000	114.60	7300	121.40	52100	118.50	28460	119.40	34600
7,	115.25	9990	123.55	78250	120.60	44200	114.55	7120	121.30	51100	118.20	26430	119.40	34600
8,	115.20	9770	123.55	78250	119.40	34600	114.50	6930	120.90	47050	118.00	25110	119.10	32500
9,	115.20	9770	125.50	105900	118.85	30870	114.60	7300	120.00	39100	117.80	23820	119.10	32500
10,	115.50	11120	124.50	91300	118.50	28460	114.65	7500	119.50	35300	117.55	22250	------	*30000
11,	115.65	11820	122.90	70200	118.90	31210	114.55	7120	118.80	30530	117.40	21320	------	*28000
12,	115.60	11580	122.10	60200	119.00	31900	114.65	7500	119.20	33200	117.10	19530	118.10	25770
13,	115.60	11580	122.50	65300	118.70	29840	114.80	8100	121.40	52100	117.00	18940	119.50	35300
14,	115.70	12060	121.85	57200	118.10	25770	114.75	7900	121.00	48000	116.90	18360	120.10	39900
15,	116.20	14560	120.80	46100	117.75	23500	114.75	7900	120.50	43300	116.70	17250	119.30	33900
16,	116.20	14560	120.20	40700	117.50	21940	114.70	7700	119.60	36000	116.60	16690	119.40	34600
17,	116.35	15340	119.30	33900	117.20	20120	114.65	7500	119.00	31900	116.50	16150	123.00	71500
18,	116.80	17800	118.65	29500	116.95	18640	114.65	7500	------	*31000	116.40	15610	126.35	117800
19,	116.45	15880	118.20	26430	116.70	17250	114.55	7120	118.70	29840	116.35	15340	125.85	110800
20,	116.65	16970	117.80	23820	116.30	15080	114.50	6930	118.20	26430	116.30	15080	125.00	98600
21,	116.60	16690	117.90	24460	116.20	14560	114.40	6560	117.80	23820	116.20	14560	124.50	91300
22,	116.35	15340	117.30	20720	116.00	13540	114.50	6930	117.50	21940	116.10	14050	127.65	136200
23,	116.30	15080	122.85	69600	115.80	12550	114.40	6560	117.20	20120	116.00	13540	131.50	205800
24,	116.15	14300	------	*77000	115.75	12300	114.30	6200	116.90	18360	115.95	13290	131.50	205800
25,	115.95	13290	124.05	84900	115.75	12300	114.35	6380	117.00	18940	116.00	13540	129.95	170600
26,	116.15	14300	123.85	82150	115.70	12060	114.60	7300	117.00	18940	116.20	14560	126.55	119900
27,	116.40	15610	124.70	93400	115.55	11350	118.55	28800	116.90	18360	116.85	18080	124.30	88500
28,	116.65	16970	123.85	82150	115.40	10660	121.00	48000	117.10	19530	------	*19000	122.90	70200
29,	116.75	17530	122.20	61500	115.30	10210	120.00	39100	118.70	29840	117.15	19830	122.30	62800
30,	116.95	18640	121.90	57800	115.20	9770	119.85	37900	122.00	59000	117.15	19830	121.00	48000
31,	------	------	122.60	66500	115.00	8920	------	------	122.00	59000	------	------	120.60	44200

Note—*Estimated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT McCALL'S FERRY, LANCASTER COUNTY, PENNA.

1903.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1, -----	120.10	39900	131.00	194100	132.80	235400	123.10	72700	118.60	29150	115.55	11350	123.00	71500	118.00	25110	127.00	127000	115.75	12300	117.80	23820	117.00	18940
2, -----	119.50	35300	129.20	158400	136.00	309300	123.40	76400	118.20	26430	115.50	11120	122.30	62800	117.70	23180	124.80	95700	115.75	12300	117.75	23500	116.80	17800
3, -----	121.30	51000	126.80	124100	133.60	253400	123.80	81500	118.00	25110	115.40	10660	119.90	38300	117.50	21940	123.20	74000	115.50	11120	117.60	22560	116.60	16690
4, -----	122.10	60200	126.50	119900	129.90	170600	123.40	76400	117.80	23820	115.30	10210	119.40	34600	117.20	20120	122.00	59000	115.40	10660	117.50	21940	116.30	15080
5, -----	122.70	67700	131.50	205800	127.00	127000	122.60	66500	117.75	23500	115.20	9770	120.10	39900	117.10	19530	121.00	48000	115.40	10660	117.40	21320	116.80	17800
6, -----	122.90	70200	133.10	242300	125.20	101500	122.10	60200	117.60	22560	115.10	9350	120.00	39100	117.10	19530	120.00	39100	115.40	10660	117.25	20420	116.80	17800
7, -----	123.10	72700	131.20	198800	124.20	87000	122.10	60200	117.50	21940	115.10	9350	119.80	37500	118.00	25110	119.50	35300	115.50	11120	117.10	19530	116.80	17800
8, -----	122.30	62800	128.70	151100	124.30	88500	122.30	62800	117.30	20720	115.50	11120	121.60	54300	119.70	36750	119.00	31900	116.10	14050	116.95	18640	116.60	16690
9, -----	121.10	49000	125.60	107300	124.70	94300	123.10	72700	117.10	19530	115.65	11820	120.80	46100	119.90	38300	118.70	29840	116.70	17250	117.00	18940	116.50	16150
10, -----	†	*46200	124.00	84200	127.10	128500	123.80	81500	117.00	18940	116.20	14560	120.00	39100	119.60	36000	118.75	30180	120.80	46100	117.00	18940	116.60	16690
11, -----	------	*43600	122.90	70200	131.00	194100	124.00	84200	116.90	18360	116.90	18360	119.00	31900	119.00	31900	118.75	30180	127.80	138300	117.05	19230	116.30	15080
12. -----	------	*41000	122.80	69000	129.70	167000	123.50	77600	116.60	16690	117.45	21630	118.70	29840	118.60	29150	118.50	28460	129.20	158400	117.00	18940	116.00	13540
13, -----	------	*38400	123.00	71500	------	*164000	123.00	71500	116.55	16420	117.50	21940	118.85	30870	118.10	25770	118.75	30180	128.50	148300	116.85	18080	116.60	16690
14, -----	‡	*35800	123.30	75200	129.40	161700	123.00	71500	116.50	16150	118.30	27100	118.50	28460	118.00	25110	118.60	29150	126.40	118500	116.60	16690	116.00	13540
15, -----	------	*33200	123.60	78900	127.50	134100	------	*120000	116.25	14820	119.60	56000	118.00	25110	117.65	22870	118.55	28800	123.80	81500	116.50	16150	115.50	11120
16, -----	------	*30600	124.50	91300	125.30	103000	------	*200000	116.20	14560	119.50	35300	117.50	21940	117.90	24460	118.00	25110	122.00	59000	116.40	15610	115.30	10210
17, -----	118.40	27780	124.90	97100	124.20	87000	131.70	210400	116.15	14300	120.00	39100	117.20	20120	117.90	24460	117.95	24780	120.90	47050	116.70	17250	115.00	8920
18, -----	118.70	29840	124.50	91300	123.30	75200	129.50	163400	116.05	13800	119.70	36570	117.15	19830	118.00	25110	118.00	25110	120.80	46100	116.80	17800	114.70	7700
19, -----	119.00	31900	------	*66000	122.70	67700	126.60	121300	115.95	13290	119.15	32800	119.50	35300	117.70	23180	118.05	25440	121.10	49000	125.60	107300	115.00	8920
20, -----	------	33000	120.30	41550	122.00	59000	124.80	95700	115.95	13290	118.75	30180	120.60	44200	117.40	21320	118.50	28460	122.50	65300	125.00	98600	116.00	13540
21, -----	119.50	35300	119.30	33900	121.70	55400	123.60	78900	115.95	13290	118.65	29500	121.80	56600	117.10	19530	118.00	25110	123.10	72700	123.10	72700	118.50	28460
22, -----	119.80	37500	119.10	32500	121.80	56600	122.60	66500	115.85	12800	118.40	27780	120.60	44200	116.80	17800	117.60	22560	122.30	62800	121.60	54300	118.60	29150
23, -----	120.00	39100	118.70	29840	122.60	66500	121.80	56600	115.75	12300	118.10	25770	120.00	39100	116.60	16690	117.40	21320	121.30	51100	120.40	42400	119.70	36750
24, -----	120.10	39900	119.50	35300	126.80	124100	121.10	49000	115.85	12800	118.50	28460	119.50	35300	117.00	18940	117.10	19530	120.50	43300	119.70	36750	120.50	43300
25, -----	119.60	36000	120.60	44200	134.10	264300	120.50	43300	115.85	12800	------	*42000	118.95	31550	117.30	20720	116.90	18360	119.80	37500	119.20	33200	119.70	36750
26, -----	119.30	33900	120.40	42400	132.80	235400	120.10	39900	115.85	12800	121.80	56600	118.10	25770	116.95	18640	116.60	16690	119.60	36000	118.80	30530	119.40	34600
27, -----	119.20	33200	120.50	43300	129.80	168800	119.80	37500	115.80	12550	123.60	78900	117.85	24140	116.70	17250	116.30	15080	119.00	31900	118.50	28460	118.40	27780
28, -----	119.50	35300	122.30	62800	127.00	127000	119.50	35300	115.80	12550	123.00	71500	118.20	26430	117.80	23820	116.20	14560	118.70	29840	118.20	26430	117.70	23180
29, -----	120.40	42400	------	--------	125.20	101500	119.10	32500	------	*12300	122.30	62800	117.80	23820	121.30	51100	116.00	13540	118.40	27780	117.70	23180	117.50	21940
30, -----	121.10	49000	------	--------	123.90	82800	------	*31000	115.70	12060	122.40	64000	117.50	21940	122.40	64000	115.90	13040	118.10	25770	117.30	20720	117.40	21320
31, -----	122.70	67700	------	--------	123.50	77600	------	--------	115.60	11580	------	------	118.00	25110	124.20	87000	------	------	118.00	25110	------	------	116.90	18360

Note.—*Estimated.
†Slush ice filled in above gage.
‡River frozen over at neck and foot of Cullys Falls.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT McCALL'S FERRY, LANCASTER COUNTY, PENNA.

1904.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	116.6	16690	120.0	39100	120.0	39100	123.9	82800	125.2	101500	119.4	34700	116.8	17800	115.8	12540	115.5	11120	116.2	14560	117.1	19520	116.0	13540
2,	116.3	15080	119.0	31900	121.0	48000	129.2	158400	124.4	89900	119.3	34000	116.5	16150	115.7	12060	115.3	10210	116.1	14040	116.9	18360	115.9	13040
3,	115.9	13040	118.5	28460	122.0	59000	132.6	230900	123.3	75200	119.9	38300	116.3	15080	116.0	13540	115.1	9340	116.0	13540	116.8	17800	115.8	12540
4,	†115.8	12540	117.9	24460	122.9	70200	130.0	172500	122.5	65300	120.4	42400	116.0	13540	116.6	16690	115.5	11120	115.8	12540	116.5	16150	115.5	11120
5,	116.0	13540	117.3	20720	128.0	141100	127.0	127000	121.5	53200	120.2	40700	116.0	13540	116.6	16690	115.3	10210	115.9	13040	116.3	15080	115.3	10210
6,	116.5	16150	117.0	18930	128.0	141100	125.0	98600	120.9	47050	120.8	46100	116.0	13540	116.4	15610	115.1	9340	115.6	11120	116.2	14560	115.3	10210
7,	116.9	18360	118.5	28460	126.4	118500	123.9	82800	120.0	39100	122.3	62800	116.2	14560	116.6	16690	115.0	8920	115.8	12540	115.9	13040	115.1	9340
8,	115.8	12540	119.4	34700	‡146.6	*300000	123.1	72700	119.8	37500	121.4	52100	116.5	16150	116.7	17240	114.9	8500	115.7	12060	115.7	12060	115.0	8920
9,	115.5	11120	121.5	53200	130.2	176500	123.2	74000	119.5	35400	120.1	39900	117.0	18930	116.7	17240	114.8	8100	115.6	11120	115.5	11120	114.8	8100
10,	115.5	11120	125.0	98600	130.4	180700	123.4	76400	119.3	34000	119.9	38300	117.5	21940	117.0	18930	114.7	7700	115.4	10660	115.7	12060	114.7	7700
11,	116.0	13540	125.7	108700	130.9	192000	124.6	92800	119.0	31900	119.6	36100	119.9	38300	117.5	21940	114.7	7700	115.3	10210	115.5	11120	114.5	6930
12,	116.8	17800	124.3	88500	126.6	121300	127.3	131200	118.6	29140	121.7	55400	121.0	48000	117.0	18930	114.8	8100	115.4	10660	115.5	11120	114.4	6560
13,	117.1	19520	122.7	67700	124.9	97100	125.9	111500	118.3	27100	121.0	48000	121.1	49000	116.4	15610	115.0	8920	115.4	10660	115.6	11580	114.2	5840
14,	117.3	20720	121.9	57800	123.6	78900	124.4	89900	118.3	27100	119.9	38300	119.9	38300	116.0	13540	115.3	10210	115.4	10660	115.9	13040	114.2	5840
15,	117.3	20720	121.0	48000	122.3	62800	123.6	78900	118.2	26430	119.3	34000	119.0	31900	115.7	12060	115.8	12540	115.3	10210	116.0	13540	114.4	6560
16,	117.4	21320	120.4	42400	121.5	53200	122.6	66500	119.0	31900	118.5	28460	118.5	28460	115.5	11120	116.1	14040	115.4	10660	116.0	13540	115.3	10210
17,	117.0	18930	119.5	35400	121.1	49000	121.9	57800	119.5	35400	118.3	27100	118.7	29820	115.3	10210	116.4	15610	118.2	26430	115.9	13040	114.6	7310
18,	116.6	16690	118.6	29140	120.7	45100	121.6	54300	119.7	36800	118.0	25110	117.4	21320	115.2	9770	117.0	18930	118.0	25100	115.8	12540	114.6	7310
19,	116.4	15610	118.0	25110	120.9	47050	121.0	48000	120.3	41550	118.0	25110	117.0	18930	115.2	9770	116.8	17800	117.5	21940	115.7	12060	114.6	7310
20,	116.0	13540	117.8	23820	121.0	48000	120.6	44200	121.3	51100	117.9	24460	116.8	17800	115.3	10210	116.5	16150	116.8	17800	115.7	12060	114.5	6930
21,	116.0	13540	118.0	25110	121.6	54300	120.2	40700	122.7	67700	117.8	23820	116.6	16690	115.7	12060	116.3	15080	117.0	18930	115.7	12060	114.6	7310
22,	117.4	21320	120.0	39100	122.6	66500	120.1	39900	123.8	81500	117.2	20120	116.5	16150	115.6	11580	116.0	13540	117.3	20720	115.6	11580	114.5	6930
23,	122.3	62800	120.9	47050	123.0	71500	119.9	38300	122.8	69000	118.0	25110	116.4	15610	115.5	11120	115.8	12540	117.5	21940	115.5	11120	114.5	6930
24,	§120.7	45100	120.1	39900	123.9	82800	119.5	35400	121.0	48000	117.9	24460	116.4	15610	115.4	10660	115.6	11580	118.7	29820	115.7	12060	114.8	8100
25,	129.3	160000	120.7	45100	128.3	145500	119.3	34000	120.6	44200	118.0	25110	117.8	23820	115.3	10210	115.2	9770	119.7	36800	115.7	12060	115.0	8920
26,	126.8	124100	120.7	45100	130.0	172500	119.2	33300	119.9	38300	117.8	23820	117.4	21320	115.4	10660	114.9	8500	120.0	39100	115.8	12540	114.9	8500
27,	124.0	84200	120.3	41550	131.6	208100	119.3	34000	120.2	40700	117.3	20720	116.5	16150	115.7	12060	114.8	8100	119.3	34000	116.0	13540	115.0	8920
28,	123.0	71500	119.8	37500	132.9	237700	119.7	36800	119.9	38300	116.9	18360	116.3	15080	116.9	18360	114.6	7310	118.5	28460	116.3	15080	115.1	9340
29,	122.3	62800	119.0	31900	130.7	187200	121.0	48000	119.6	36100	116.8	17800	116.0	13540	116.6	16690	114.8	8100	117.9	24460	115.7	12060	115.5	11120
30,	121.4	52100	-----	-----	128.9	153900	122.1	60200	119.0	31900	116.7	17240	116.0	13540	116.1	14040	115.8	12540	117.8	23820	116.1	14040	116.2	14560
31,	120.5	43300	-----	-----	125.3	103000	-----	-----	119.6	36100	-----	-----	115.9	13040	115.9	12540	-----	-----	117.5	21940	-----	-----	123.0	71500

†Entire river covered with 14 to 18 inch ice.
§Ice broke and went out at 5:30 p. m.; 133.8 maximum reading during night, 24th and 25th.
‡Ice moved 2 p. m.
*Maximum discharge 681,000 sec.-ft. Mean daily discharge estimated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT McCALL'S FERRY, LANCASTER COUNTY, PENNA.

1905.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	122.4	64000	116.6	16690	116.6	16690	126.9	125580	119.7	36800	116.5	16150	117.9	24465	117.1	19525	116.6	16690	116.3	15080	117.6	22560	119.2	33300
2,	121.2	50000	116.1	14040	116.7	17240	125.2	101520	119.0	31900	116.3	15080	117.6	22560	116.8	17800	116.5	16150	116.0	13540	117.2	20120	123.0	71500
3,	121.0	48000	116.9	18360	116.8	17800	124.6	92800	118.2	26430	116.3	15080	117.4	21320	116.5	16150	116.8	17800	116.1	14040	117.0	18930	123.4	76400
4,	120.5	43300	117.0	18930	116.8	17800	123.6	78900	117.9	24465	116.3	15080	117.1	19525	116.3	15080	117.0	18930	116.0	13540	117.0	18930	126.2	115700
5,	119.3	34000	116.6	16690	117.0	18930	122.7	67750	117.7	23190	116.2	14560	117.0	18930	116.3	15080	118.4	27780	115.9	13040	117.0	18930	132.0	217300
6,	119.8	37500	116.0	13540	116.9	18360	122.2	61500	117.7	23190	116.1	14040	118.1	25770	116.5	16150	121.0	48000	115.9	13040	117.0	18930	130.9	191840
7,	122.6	66500	116.1	14040	117.3	20720	122.9	70250	117.7	23190	116.2	14560	118.7	29820	116.6	16690	119.7	36800	115.9	13040	117.1	19525	127.0	127000
8,	128.4	146860	116.4	15610	117.5	21940	122.2	61500	117.6	22560	116.6	16690	118.3	27105	117.0	18930	119.7	36800	116.0	13540	117.0	18930	124.7	94200
9,	127.0	127000	116.2	14560	118.3	27105	122.6	66500	117.6	22560	116.9	18360	117.7	23190	116.9	18360	121.2	50000	116.1	14040	117.05	19230	123.1	72750
10,	123.8	81500	116.0	13540	119.5	35400	122.4	64000	117.4	21320	118.6	29140	117.3	20720	116.6	16690	120.0	39100	116.2	14560	117.2	20120	122.5	65250
11,	123.2	74000	116.2	14560	119.9	38300	122.1	60250	117.3	20720	118.9	31200	118.6	29140	116.2	14560	119.0	31900	115.9	13040	117.2	20120	121.3	51050
12,	122.0	59000	116.2	14560	121.9	57800	121.6	54300	117.3	20720	119.1	32600	118.5	28460	116.5	16150	118.8	30500	116.8	17800	117.4	21320	120.8	46100
13,	121.3	51050	116.4	15610	122.0	59000	121.5	53200	117.4	21320	118.7	29820	118.1	25770	116.8	17800	119.1	32600	117.0	18930	117.7	23190	120.3	41550
14,	120.9	47050	116.4	15610	121.5	53200	121.8	56000	117.4	21320	118.5	28460	117.6	22560	117.7	23190	119.5	35400	119.4	34700	117.6	22560	119.9	38300
15,	120.5	43300	116.1	14040	121.0	48000	122.3	62750	117.3	20720	118.4	27780	117.9	24465	119.9	38300	119.4	34700	119.9	38300	117.3	20720	119.5	35400
16,	120.0	39100	115.8	12540	120.9	47050	121.7	55450	117.7	23190	118.3	27105	118.0	25110	120.6	44200	120.0	39100	120.1	39900	117.0	18930	118.4	27780
17,	119.6	36100	116.0	13540	120.6	44200	121.2	50000	118.0	25110	118.1	25770	117.9	24465	123.0	71500	119.6	36100	119.5	35400	117.0	18930	118.2	26430
18,	119.1	32600	116.3	15080	120.6	44200	120.8	46100	118.3	27105	117.7	23190	117.5	21940	122.4	64000	118.8	30500	118.6	29140	116.9	18360	118.1	25770
19,	119.0	31900	116.0	13540	124.5	91350	120.5	43300	118.5	28460	117.4	21320	117.2	20120	120.7	45150	118.3	27105	118.1	25770	116.8	17800	117.7	23190
20,	119.3	34000	115.9	13040	132.5	228600	120.0	39100	118.3	27105	117.1	19525	116.9	18360	119.9	38300	118.3	27105	118.0	25110	116.8	17800	117.5	21940
21,	119.0	31900	115.6	11580	136.0	309300	119.8	37500	118.2	26430	117.0	18030	116.5	16150	118.8	30500	118.2	26430	119.2	33300	116.6	16690	117.85	24140
22,	119.0	31900	115.6	11580	137.8	352900	119.6	36100	117.9	24465	117.0	18930	116.2	14560	118.6	29140	118.5	28460	120.0	39100	116.3	15080	120.7	45150
23,	119.2	33300	115.5	11120	134.9	282960	119.3	34000	117.7	23190	119.3	34000	116.1	14040	118.1	25770	118.9	31200	120.7	45150	116.2	14560	120.9	47050
24,	118.7	29820	115.7	12060	132.4	226940	119.5	35400	117.4	21320	120.5	43300	116.0	13540	117.6	22560	118.3	27105	121.0	48000	116.1	14040	121.6	54300
25,	118.1	25770	115.6	11580	131.5	205800	120.6	44200	117.2	20120	123.0	71500	115.9	13040	117.9	24465	118.1	25770	120.2	40700	115.9	13040	122.0	59000
26,	117.5	21940	116.0	13540	134.6	275940	120.5	43300	117.0	18930	122.3	62750	116.0	13540	122.0	59000	117.8	23820	119.6	36100	115.8	12540	122.3	62750
27,	116.9	18360	116.5	16150	133.7	255520	120.1	39900	116.8	17800	121.1	49000	115.9	13040	120.0	39100	117.5	21940	119.1	32600	115.8	12540	121.6	54300
28,	116.3	15080	116.5	16150	132.8	235440	119.7	36800	116.7	17240	120.0	39100	115.8	12540	119.1	32600	117.1	19525	118.7	29820	115.75	12310	120.8	46100
29,	116.5	16150	-----	-----	131.4	203460	119.3	34000	116.6	16690	119.3	34000	115.9	13040	118.0	25110	116.8	17800	118.4	27780	116.0	13540	120.0	39100
30,	116.4	15610	-----	-----	130.5	182800	119.0	31900	116.6	16600	118.5	28460	115.9	13040	118.5	28460	116.5	16150	118.1	25770	118.1	25770	120.5	43300
31,	116.0	13540	-----	-----	128.6	149700	-----	-----	116.5	16150	-----	-----	116.4	15610	117.0	18930	-----	-----	117.8	23820	-----	-----	120.3	41550

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT McCALL'S FERRY, LANCASTER COUNTY, PENNA.

1906.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	107.17	49960	106.24	41520	105.8	37640	116.0	157000	105.7	36780	109.2	69044	103.1	16960	103.0	16300	103.8	21840	101.3	6650	104.2	24800	104.0	23300
2,	105.97	39140	105.88	38340	105.8	37640	117.8	184220	105.4	34240	107.7	54840	102.8	14990	102.9	15640	103.7	21120	101.3	6650	104.2	24800	104.0	23300
3,	106.15	40720	105.02	31160	105.6	35920	115.9	155520	105.3	33420	106.6	44740	103.1	16960	103.1	16960	103.6	20400	101.5	7600	104.1	24050	104.0	23300
4,	106.96	48030	104.41	26400	110.7	84820	113.9	126372	105.2	32600	106.0	39400	103.0	16300	103.3	18320	103.2	17640	101.0	5300	104.0	23300	103.5	19700
5,	106.75	46100	104.33	25790	111.1	89500	112.0	100500	105.0	31000	105.6	35920	103.8	21840	104.9	30210	103.2	17640	102.5	13110	104.0	23300	103.5	19700
6,	108.28	60230	103.90	22560	112.0	100500	111.4	93100	105.0	31000	105.1	31800	105.0	31000	103.7	21120	104.0	23300	104.2	24800	104.0	23300	103.5	19700
7,	108.28	60230	102.98	16170	111.0	88300	112.0	100500	105.1	31800	104.9	30210	104.8	29420	103.7	21120	103.6	20400	103.2	17640	103.9	22560	103.5	19700
8,	107.89	56590	102.57	13540	109.6	72970	113.4	119208	105.9	38520	104.7	28640	104.2	24800	103.5	19700	103.2	17640	103.0	16300	103.5	19700	103.2	17640
9,	107.17	49960	102.41	12560	108.8	65180	112.5	106980	105.7	36780	104.8	29420	103.9	22560	103.6	20400	102.8	14990	102.4	12500	103.2	17640	103.2	17640
10,	105.29	33340	102.81	15050	107.5	53000	113.0	113700	105.1	31800	105.9	38520	103.5	19700	103.6	20400	102.5	13110	102.2	11330	103.3	18320	106.8	46560
11,	105.29	33340	102.98	16170	------	*46200	113.3	117876	104.9	30210	105.9	38520	103.5	19700	103.6	20400	103.0	16300	102.0	10200	103.3	18320	107.0	48400
12,	104.55	27470	102.81	15050	106.0	39400	115.9	155520	104.8	29420	105.0	31000	103.4	19000	103.8	21840	103.4	19000	101.8	9120	103.0	16300	105.7	36780
13,	104.94	30530	102.73	14540	105.0	31000	115.8	154040	104.6	27860	104.5	27090	103.0	16300	104.6	27860	102.0	10200	101.8	9120	102.6	13720	105.2	32600
14,	104.94	30530	103.14	17230	105.8	37640	114.2	130680	104.6	27860	104.8	29420	102.9	15640	105.2	32600	102.1	10760	101.8	9120	102.5	13110	105.2	32600
15,	105.11	31880	103.56	20120	105.5	35080	114.0	127800	104.5	27090	104.6	27860	102.8	14990	104.9	30210	102.0	10200	102.1	10760	102.5	13110	105.0	31000
16,	105.11	31880	104.07	23820	105.9	38520	119.0	202930	104.4	26320	104.5	27090	102.9	15640	104.5	27090	102.4	12500	101.7	8600	102.5	13110	105.0	31000
17,	105.46	34740	103.64	20690	105.1	31800	117.0	172000	104.3	25580	105.1	31800	103.2	17640	103.8	21840	102.4	12500	101.7	8600	102.5	13110	105.0	31000
18,	105.62	36090	103.39	18930	104.8	29420	115.3	14680	104.2	24800	104.4	26320	103.0	16300	103.5	19700	102.4	12500	101.6	8090	102.6	13720	105.8	37640
19,	105.62	36090	103.47	19490	104.8	29420	113.4	119208	104.1	24050	105.5	35080	102.9	15640	103.0	16300	102.0	10200	101.4	7120	102.6	13720	106.5	43840
20,	105.37	33990	103.39	18030	104.8	29420	111.6	95540	104.1	24050	108.3	60420	102.7	14350	102.9	15640	101.9	9650	102.0	10200	102.6	13720	106.7	45650
21,	105.29	33340	103.64	20690	104.1	24050	110.0	77000	104.1	24050	110.0	77000	103.5	19700	102.8	14990	101.9	9650	104.6	27860	103.0	16300	106.0	39400
22,	105.20	32600	104.94	30530	104.3	25560	109.0	67100	104.2	24800	109.5	71960	103.4	19000	103.7	21120	101.5	7600	105.4	34240	105.0	31000	106.2	41160
23,	105.29	33340	105.62	36090	104.1	24050	108.1	58540	104.1	24050	108.6	63260	103.5	19700	103.9	22560	101.5	7600	106.8	46560	106.0	39400	105.9	38520
24,	105.62	36090	106.34	42410	103.9	22560	107.6	53920	103.7	21120	107.2	50240	103.4	19000	103.2	17640	101.2	6190	107.4	52080	106.0	39400	104.9	30210
25,	110.77	85630	105.97	39140	103.8	21840	107.4	52080	103.3	18320	106.2	41160	103.3	18320	102.9	15640	101.5	7600	106.4	42940	106.0	39400	104.4	26220
26,	114.73	138360	107.76	55390	103.6	20400	107.3	51160	103.1	16960	105.6	35920	103.2	17640	103.8	21840	101.1	5740	105.6	35920	105.6	35920	103.6	20400
27,	112.84	111550	107.40	52080	103.7	21120	107.3	51160	102.9	15640	105.1	31800	103.0	16300	103.6	20400	101.2	6190	105.2	32600	105.2	32600	103.5	19700
28,	110.65	84240	106.64	52080	104.7	28640	106.9	47480	103.1	16960	104.5	27090	103.0	16300	103.9	22560	101.3	6650	104.8	29420	104.8	29420	103.4	19000
29,	109.45	71470	------	------	107.5	58000	106.2	41160	103.4	19000	103.9	22560	103.2	17640	104.5	27090	101.4	7120	104.4	26320	104.4	26320	103.6	20400
30,	107.89	56590	------	------	116.6	166000	106.6	39400	108.0	57600	103.4	19000	103.1	16960	104.7	28640	101.4	7120	104.0	23300	104.0	23300	103.8	21840
31,	106.96	48030	------	------	115.8	154080	------	------	110.7	84820	------	------	103.0	16300	104.2	24800	------	------	104.0	23300	------	------	104.0	23300

Note:—All above gage heights refer to Cullys Falls gage.
*Interpolated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT McCALL'S FERRY, LANCASTER COUNTY, PENNA.

1907.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	110.0	77000	106.4	22400	102.8	14990	109.5	72050	109.1	68090	103.8	21840	------	32500	102.5	13110	101.5	7600	103.4	19000	106.5	43840	104.8	29420
2,	116.9	170500	106.5	22400	102.8	14990	108.6	63300	108.0	57600	104.0	23300	------	32500	102.6	13720	101.1	5760	103.2	17640	106.4	42940	104.9	30210
3,	115.5	149650	106.6	22400	104.5	27090	107.7	54840	107.0	48400	104.5	27090	------	32500	102.5	13110	101.4	7120	103.1	16960	106.4	42940	104.7	28640
4,	113.3	117930	106.6	22400	104.3	25560	107.1	49320	107.0	48400	106.2	41160	------	32500	102.3	11910	101.6	8090	103.0	16300	107.7	54840	104.7	28640
5,	112.2	90740	105.7	22400	104.0	23300	106.4	42940	106.7	45650	107.1	49320	105.4	34240	102.6	13720	101.5	7600	103.0	16300	108.5	62350	104.3	25560
6,	110.8	86040	105.2	22400	104.3	25560	106.0	39400	106.1	40280	106.6	44740	105.0	31000	------	10200	101.5	7600	------	*17650	108.7	64250	104.1	24050
7,	111.7	96840	105.0	22400	104.3	25560	105.7	36780	105.8	37640	106.2	41160	105.0	31000	------	10200	101.8	9120	103.4	19000	108.3	60450	104.0	23300
8,	111.0	88300	104.2	22400	104.2	24800	105.6	35920	104.9	30210	106.0	39400	105.2	32600	------	10200	101.9	9650	104.0	23300	107.6	53920	103.9	22560
9.	109.8	75020	104.6	22400	104.3	25560	105.4	34240	105.8	37640	105.7	36780	104.5	27090	------	10200	101.9	9650	105.2	32600	108.6	63300	103.6	20400
10,	109.7	74030	104.7	22400	104.3	25560	106.1	40280	105.3	34420	105.3	34420	104.4	26320	102.2	13330	102.2	11330	105.3	34420	110.4	81520	104.4	26320
11,	111.6	95620	104.7	22400	104.2	24800	106.5	43840	108.0	57600	105.0	31000	104.4	26320	102.2	11330	102.5	13110	105.6	35920	110.0	77000	111.4	93180
12,	110.4	81520	105.2	22400	103.8	21840	106.3	42050	108.4	61400	104.9	30210	105.0	31000	102.2	11330	105.3	34420	106.0	39400	109.0	67100	119.9	217210
13,	109.8	75020	104.9	22400	104.3	25560	105.6	35920	107.8	55760	104.6	27860	104.5	27090	102.3	11910	107.0	48400	------	*36900	107.8	55760	116.3	161500
14,	109.8	75020	104.5	22400	109.4	71060	105.5	35080	106.8	46560	104.5	27090	103.8	21840	102.0	10200	105.8	37640	105.3	34420	106.8	46560	114.3	132150
15,	110.9	87170	104.4	22400	121.7	246790	105.3	34420	105.9	38520	104.4	26320	103.3	18320	101.9	9650	------	*34720	104.7	28640	106.2	41160	------	100000
16,	111.9	99280	104.4	22400	121.8	248460	105.3	34420	105.1	31800	104.7	28640	103.5	19700	101.8	9120	105.1	31800	104.5	27090	105.7	36780	110.4	81520
17,	111.8	98060	104.4	22400	118.0	187300	105.3	34420	104.8	29420	105.2	32600	103.7	21120	101.8	9120	104.5	27090	104.4	36[illegible]20	105.4	34240	109.3	70070
18,	111.2	90740	104.5	22400	116.6	166000	105.1	31800	104.2	24800	104.7	28640	103.6	20400	101.5	7600	103.9	22560	104.1	24050	104.9	30210	108.4	61400
19,	109.5	72050	104.8	22400	116.9	170500	105.7	36780	104.7	28640	104.1	24050	104.0	23300	101.3	6650	103.4	19000	103.7	21120	104.9	30210	107.6	53920
20.	109.2	69080	104.6	22400	118.0	187300	104.8	29420	104.3	25560	103.8	21840	103.7	21120	101.7	8600	103.1	16960	------	*19720	104.6	27860	107.1	49320
21,	110.9	87170	104.2	22400	117.8	184240	------	*29030	104.2	24800	103.6	20400	103.5	19700	101.5	7600	103.0	16300	103.3	18320	104.4	26320	106.7	45650
22,	113.6	122160	104.5	22400	116.4	163000	104.7	28640	104.0	23300	103.5	19700	103.3	18320	101.4	7120	------	*18350	------	*16990	104.5	27090	106.4	42940
23,	113.8	124980	------	22400	114.8	139400	105.1	31800	103.9	22560	103.5	19700	103.2	17640	101.3	6670	103.6	20400	------	*15670	104.5	27090	106.5	43840
24,	111.4	93180	------	22400	114.0	127800	104.8	29420	103.8	21840	103.4	19000	103.1	16960	101.4	7120	104.6	27860	102.7	14350	105.0	31000	107.9	56680
25,	111.1	44300	------	22400	------	150000	104.5	27090	103.7	21120	103.4	19000	103.1	16960	101.2	6200	104.5	27090	102.8	14990	106.0	39400	------	130000
26,	112.5	44300	102.9	15640	114.2	130700	105.3	34420	103.5	19700	103.5	19700	103.0	16300	101.2	6200	104.2	24800	102.7	14350	105.6	35920	117.5	179650
27,	110.6	44300	102.7	14350	112.2	103140	107.0	48400	103.8	21840	103.8	21840	102.8	14990	101.7	8600	104.0	23300	102.7	14350	105.3	34420	115.3	146710
28,	109.0	44300	103.0	16300	111.3	91960	108.2	59500	103.8	21840	103.8	21840	102.5	13110	101.8	9120	103.7	21120	103.0	16300	------	*32310	112.9	112380
29,	106.6	44300	------	------	110.3	80390	110.8	86040	103.7	21120	103.8	21840	102.4	12500	101.7	8600	------	*21120	103.3	18320	104.9	30210	111.0	88300
30,	106.6	44300	------	------	109.7	74030	110.2	79260	103.7	21120	------	21000	102.5	13110	101.7	8600	103.7	21120	104.1	24050	104.8	29420	110.9	87170
31,	106.6	44300	------	------	109.6	73040	------	------	103.7	21120	------	------	102.5	13110	101.5	7600	------	------	105.6	35920	------	------	112.0	100500

Note:—Gage heights 1907-8 refer to Cullys Falls gage. Conditions of flow probably affected by ice conditions from about January 25 to February 25, 1907. March 3 to 13, 1907, may also have been affected. Discharge estimated.
*Interpolated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT McCALL'S FERRY, LANCASTER COUNTY, PENNA.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	112.1	101820	105.8	18600	108.5	62350	116.2	160000	106.4	42940	107.7	54840	102.2	11330	102.9	15640	101.5	7600	101.3	6650	101.8	9120	101.4	7120
2,	113.3	117930	106.5	18600	107.3	51160	114.1	129250	106.5	43840	108.0	57600	102.2	13330	102.5	13110	101.5	7600	101.5	7600	101.8	9120	101.4	7120
3,	110.2	79260	106.2	18600	106.8	46500	112.4	105780	107.3	51160	107.6	53920	102.2	11330	102.1	10760	101.4	7120	101.4	7120	101.8	9120	101.2	6200
4,	109.2	69080	105.3	18600	107.8	55760	110.9	87170	109.4	71000	106.9	47480	102.2	13330	102.0	10200	101.4	7120	102.2	6200	101.7	8600	101.3	6650
5,	108.4	61400	104.4	18600	107.4	52080	110.0	77000	109.6	73040	106.5	43840	102.3	11910	101.9	9650	101.4	7120	100.8	4550	101.6	8090	100.7	4190
6,	107.3	51160	104.5	18600	108.5	62350	109.2	69080	109.2	69080	105.9	38520	102.6	13720	101.8	9120	101.1	5760	101.2	6200	101.5	7600	100.4	3230
7,	106.7	45650	104.0	18600	108.4	61400	108.1	58550	109.5	72050	105.4	34240	102.7	14350	101.8	9120	100.4	3230	101.2	6200	101.4	7120	100.5	3530
8,	106.7	45650	104.0	18600	110.0	77000	107.6	53920	113.9	126390	104.8	29420	102.8	14990	102.0	10200	100.6	3850	101.0	5330	101.3	6650	101.0	5330
9,	107.2	50240	------	18600	112.8	111060	107.4	52080	117.5	179650	104.3	25500	102.4	12500	102.0	10200	100.9	4930	100.7	4190	101.2	6200	101.1	5760
10,	105.7	36780	104.0	18600	113.1	115110	107.7	54840	117.2	125060	104.2	24800	102.4	12500	102.0	10200	100.9	4930	100.6	3850	101.2	6200	100.6	3850
11,	------	35000	103.8	18600	111.7	96840	108.5	62350	115.7	152590	104.1	24050	102.0	10200	102.1	10760	100.9	4930	100.5	3530	101.2	6200	100.7	4190
12,	------	35000	103.1	18600	111.0	88300	------	85030	114.1	129250	104.0	23300	101.7	8600	102.0	10200	100.9	4930	100.3	2950	101.2	6200	101.0	5330
13,	111.9	99280	103.5	18600	112.1	101820	109.3	70070	112.5	107100	103.9	22500	101.5	7600	101.9	9650	100.7	4190	101.3	6650	101.0	5330	101.2	6200
14,	112.5	107100	103.8	18600	113.7	123570	108.5	62350	110.8	86040	103.4	19000	101.7	8600	101.8	9120	100.5	3530	101.0	5330	100.9	4930	100.3	2950
15,	112.6	108420	107.9	56680	119.6	212440	107.5	53000	109.5	72050	103.1	16960	102.2	11330	101.8	9120	100.7	4190	101.0	5330	100.9	4930	101.3	6650
16,	111.7	96840	119.9	217210	121.9	250130	107.3	51160	109.1	68090	103.0	16300	102.1	10760	101.7	8600	100.7	4190	100.8	4550	100.9	4930	101.3	6650
17,	109.9	76010	123.7	281080	123.0	268900	107.2	50240	111.0	88300	102.9	15640	102.0	10200	101.6	8090	100.4	3230	100.9	4930	100.8	4550	101.5	7600
18,	108.9	66150	120.8	231840	121.0	235100	107.2	50240	111.2	90740	102.9	15640	102.0	10200	101.8	9120	100.3	2950	101.0	5330	101.1	5760	101.4	7120
19,	107.9	56680	116.3	161500	120.1	220430	------	*53330	111.0	88300	102.9	15640	102.0	10200	101.7	8600	100.7	4190	100.7	4190	101.1	5760	101.4	7120
20,	107.1	49320	113.7	123570	124.6	296920	------	*56420	111.0	88300	102.8	14990	101.6	8090	101.6	8090	100.7	4190	101.0	5330	101.3	6650	101.5	7600
21,	106.7	45650	110.7	84910	123.0	268900	108.2	59530	116.2	160000	102.7	14350	101.8	9120	101.6	8090	100.3	2950	100.9	4930	101.3	6650	101.2	6200
22,	106.4	42940	109.2	69080	118.7	198220	------	82000	114.4	133600	102.5	13110	102.0	10200	101.7	8600	100.3	2950	100.8	4550	101.3	6650	102.1	10760
23,	106.1	40280	108.4	61400	114.5	13[illegible]050	109.1	68090	114.0	127800	102.5	13110	102.1	10760	101.6	8090	100.6	3850	100.7	4190	101.3	6650	102.3	11910
24,	106.2	41160	107.5	53000	112.4	105780	------	*58240	112.6	108420	102.5	13110	102.4	12500	101.7	8600	100.7	4190	------	*5830	101.2	6200	102.3	11910
25,	106.0	39400	108.3	60450	111.9	99280	107.0	48400	111.9	99280	102.4	12500	105.4	34240	101.8	9120	100.7	4190	------	*7470	101.1	5760	102.0	10200
26,	106.0	30000	109.8	75020	112.7	109740	------	*47480	110.2	79260	102.3	11910	107.0	48400	102.0	10200	100.5	3530	101.8	9120	101.1	5760	101.9	9650
27,	106.2	30000	114.0	127800	114.0	127800	106.8	46560	108.8	65200	102.2	11330	106.0	39400	101.9	9650	100.3	2950	102.0	10200	100.7	4190	101.5	7600
28,	105.9	30000	111.7	96840	113.5	120750	106.6	44740	108.8	65200	102.1	10760	105.2	32600	101.8	9120	100.2	2690	102.0	10200	100.3	2950	101.5	7600
29,	106.1	30000	109.3	70070	115.6	151120	106.5	43840	108.1	58550	102.1	10760	104.1	24050	101.7	8600	100.2	4930	110.9	9650	100.4	3230	101.6	8090
30,	106.9	30000	------	------	117.4	178120	106.5	43840	107.5	53000	102.1	10760	103.8	21840	101.6	8090	101.1	5760	102.2	11330	100.9	4930	101.5	7600
31,	106.9	30000	------	------	118.2	190420	------	------	107.1	49320	------	------	103.3	18320	101.4	7120	------	------	------	*10220	------	------	101.6	8090

Note:—Gage heights 1907-8 refer to Cullys Falls gage. Conditions of flow were probably affected by ice conditions from about January 26 to March 14, 1908. Discharge estimated.
***Interpolated.**

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUSQUEHANNA RIVER, AT McCALL'S FERRY, LANCASTER COUNTY, PENNA.

1909.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	101.1	5760	105.4	34200	112.6	108000	108.2	59500	118.0	187000	103.6	20400	103.4	19000	101.4	7120	101.0	5330	100.7	4190	100.6	3850	101.1	5760
2,	101.1	5760	104.8	29400	110.5	89500	107.9	56700	123.0	269000	103.6	20400	103.1	17000	101.2	6200	100.9	4930	100.6	3850	101.2	6200	101.0	5330
3,	101.2	6200	104.0	23300	109.2	69000	107.5	53000	124.6	297000	103.4	19000	102.9	15600	101.3	6650	100.8	4550	100.5	3530	101.3	6650	100.8	4550
4,	101.4	7120	103.7	21100	108.6	63300	107.0	48400	119.9	218000	103.3	18300	102.6	13700	101.2	6200	100.7	4190	100.3	2950	101.0	5330	100.6	3850
5,	101.9	9650	103.8	21800	108.4	61400	106.8	46600	116.3	162000	103.4	19000	102.3	11900	101.2	6200	100.6	3850	100.5	3530	101.1	5760	100.8	4550
6,	102.4	12500	104.2	24800	108.0	57600	107.0	48400	113.9	126000	103.6	20400	102.3	11900	101.1	5760	100.3	2950	100.4	3230	101.2	6200	100.6	3850
7,	103.0	16300	105.1	31800	107.2	50200	106.8	46600	112.4	106000	105.4	34200	102.2	11300	101.2	6200	100.2	2690	100.5	3530	101.4	7120	100.6	3850
8,	106.4	42900	107.4	52100	106.9	47500	106.6	44700	111.0	88300	106.4	42900	102.1	10800	101.0	5330	100.9	4930	100.5	3530	100.6	3850	101.0	5330
9,	107.5	53000	109.9	76000	107.1	49300	107.3	51200	109.9	76000	106.6	44700	102.0	10200	100.9	4930	100.9	4930	100.6	3850	100.3	2950	100.7	4190
10,	107.2	50200	109.5	72000	107.4	52100	108.2	59500	109.1	68100	106.7	45600	101.9	9650	100.7	4190	100.7	4190	100.4	3230	101.0	5330	100.2	2690
11,	106.8	46600	109.7	73900	107.8	55800	107.8	55800	108.5	62300	106.4	42900	101.7	8600	100.5	3530	100.8	4550	100.4	3230	100.6	3850	100.0	2200
12,	106.0	39400	109.4	71000	108.7	64200	107.3	51200	108.0	57600	106.0	39400	101.6	8090	100.8	4550	101.0	5330	100.7	4190	100.8	4550	100.2	2690
13,	104.6	27900	108.4	61400	110.0	77000	106.8	46600	107.7	54800	105.9	38500	101.6	8090	100.5	3530	100.6	3850	100.6	3850	100.6	3850	101.0	5330
14,	104.5	27100	107.8	55800	110.4	81400	106.8	46600	107.6	53900	107.1	49300	101.5	7600	100.8	4550	100.9	4930	101.0	5330	100.5	3530	101.5	7600
15,	104.0	23300	107.5	53000	109.1	68100	109.2	69000	107.4	52100	107.0	48400	101.6	8090	100.6	3850	101.3	6650	100.9	4930	100.4	3230	104.3	25600
16,	103.7	21100	107.7	54800	108.1	58500	116.5	164000	107.0	48400	106.9	47500	101.4	7120	100.4	3230	101.0	5330	101.0	5330	100.6	3850	104.0	23300
17,	102.9	15600	112.6	108000	107.5	53000	116.5	164000	106.5	43800	106.9	47500	101.4	7120	100.7	4190	101.0	5330	101.1	5760	100.9	4930	103.5	19700
18,	102.8	15000	114.7	138000	106.9	47500	113.9	120000	106.0	39400	106.7	45600	101.3	6650	100.9	4930	100.9	4930	100.6	3850	100.9	4930	103.0	16300
19,	102.4	12500	113.4	119000	106.1	40300	111.8	98000	105.7	36800	106.4	42900	101.3	6650	100.8	4550	100.8	4550	101.2	6200	100.8	4550	102.5	13100
20,	101.8	9120	112.5	107000	105.4	34200	110.1	78100	105.4	34200	106.3	42000	101.6	8090	100.7	4190	100.7	4190	101.3	6650	101.0	5330	101.4	7120
21,	101.7	8600	113.8	125000	105.3	33400	109.6	72900	105.1	31800	105.8	37600	101.4	7120	101.0	5330	100.8	4550	101.2	6200	100.7	4190	101.5	7600
22,	101.9	9650	115.2	145000	105.1	31800	109.7	73900	105.2	32600	105.5	35100	101.3	6650	101.1	5700	101.0	5330	101.1	5760	100.5	3530	101.2	6200
23,	102.2	11300	114.7	138000	104.8	29400	109.8	74900	105.2	32600	105.0	31000	101.4	7120	100.8	4550	100.9	4930	101.0	5330	100.7	4190	101.4	7120
24,	102.8	15000	115.3	147000	104.6	27900	110.1	78100	104.8	29400	104.4	26300	101.3	6650	101.1	5760	100.9	4930	101.1	5760	100.9	4930	101.5	7600
25,	103.8	17600	118.3	192000	104.5	27100	110.9	87100	104.5	27100	104.1	24000	101.3	6650	101.0	5330	100.7	4190	100.7	4190	100.8	4550	101.7	8600
26,	105.3	33400	120.3	224000	104.5	27100	110.7	84800	104.0	23300	104.0	23300	101.2	6200	101.0	5330	100.5	3530	100.3	2950	100.5	3530	101.8	9120
27,	114.5	135000	118.0	187000	105.3	33400	110.4	81400	103.9	22600	103.8	21800	101.3	6650	101.0	5330	100.4	3230	101.2	6200	100.7	4190	101.6	8090
28,	114.9	141000	114.7	138000	107.5	53000	109.7	73900	103.8	21800	103.8	21800	101.4	7120	101.1	5760	100.7	4190	101.3	6650	100.8	4550	101.5	7600
29,	112.2	103000	-----	-----	109.3	70000	109.4	71000	103.7	21100	103.9	22600	101.6	8090	101.0	5330	101.0	5330	101.2	6200	100.4	3230	101.4	7120
30,	109.1	68100	-----	-----	109.9	66100	108.9	66100	103.7	21100	103.6	20400	101.5	7600	100.9	4930	100.7	4190	101.3	6650	100.5	3530	101.4	6500
31,	107.1	49300	-----	-----	108.6	63300	-----	-----	103.9	22600	-----	-----	101.4	7120	101.0	5330	-----	-----	101.1	5760	-----	-----	101.5	6000

Note: Readings were made on gage No. 5, below Cullys Falls. Discharge probably unaffected by ice during the winter periods, except for short intervals of a day or two.

ESTIMATED MONTHLY DISCHARGE OF SUSQUEHANNA RIVER, AT McCALL'S FERRY, LANCASTER COUNTY.

(Drainage area, 26766 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1902.					
June,	18640	9770	13908	.52	.58
July,	105900	20720	61768	2.307	2.658
August,	61500	8920	27126	1.013	1.168
September,	48000	6200	11556	.431	.481
October,	67700	18360	38248	1.429	1.649
November,	60200	13290	22657	.846	.944
December,	205800	19830	69111	2.582	2.977
1903.					
January,	72700	27780	43533	1.626	1.877
February,	242300	29840	95082	3.552	3.698
March,	309300	55400	134461	5.023	5.791
April,	210400	31000	79900	2.910	3.247
May,	29150	11580	16826	.628	.724
June,	78900	9350	29859	1.115	1.244
July,	71500	19830	35630	1.331	1.535
August,	87000	16690	28206	1.053	1.214
September,	127000	13040	34183	1.277	1.426
October,	158400	10660	48757	1.822	2.102
November,	107300	15610	30797	1.151	1.284
December,	43300	7700	19751	.737	.848
The year,	309300	7700	49638	1.854	25.019
1904.					
January,	160000	11120	34170	1.280	1.480
February,	108700	18930	43360	1.620	1.750
March,	300000	39100	114600	4.280	4.930
April,	230900	33300	78400	2.930	3.270
May,	101500	26430	46720	1.750	2.020
June,	62800	17240	34580	1.290	1.440
July,	49000	13040	21410	.800	.922
August,	21940	9770	13880	.519	.598
September,	18930	7310	11050	.413	.461
October,	39100	10210	18700	.698	.805
November,	19520	11120	13320	.498	.556
December,	71500	5840	10890	.407	.469
The year,	300000	5840	36760	1.370	18.700

ESTIMATED MONTHLY DISCHARGE OF SUSQUEHANNA RIVER, AT McCALL'S FERRY, LANCASTER COUNTY.

(Drainage area, 26766 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1905.					
January,	146900	13540	45170	1.69	1.95
February,	18930	11120	14320	.54	.56
March,	352900	16690	116300	4.34	5.00
April,	125600	31900	56150	2.10	2.34
May,	36800	16150	22920	.86	.99
June,	71500	14040	27850	1.04	1.16
July,	29820	12540	20190	.75	.87
August,	71500	14560	28360	1.06	1.22
September,	50000	16150	29040	1.08	1.20
October,	48000	13040	25730	.96	1.11
November,	25770	12300	18200	.68	.76
December,	217300	21940	61930	2.31	2.66
The year,	352900	11120	38850	1.45	19.83
*1906.					
January,	138000	27400	49700	1.85	2.13
February,	55400	12500	26800	1.00	1.04
March,	166000	20400	51000	1.90	2.19
April,	203000	39400	107000	3.99	4.45
May,	84800	15600	29900	1.12	1.29
June,	77000	19000	39200	1.46	1.63
July,	31000	14400	18600	.69	.80
August,	32600	15000	21600	.81	.93
September,	23300	5740	12800	.48	.53
October,	52100	5300	19000	.71	.82
November,	39400	13100	22600	.84	.94
December,	48400	17600	29100	1.09	1.26
The year,	203000	5300	35600	1.33	18.01
†1907.					
January,	170000	----------	84000	3.13	3.61
February,	----------	----------	21700	.81	.84
March,	248000	15000	93500	3.49	4.02
April,	86000	27100	42500	1.59	1.77
May,	68100	19700	35100	1.31	1.51
June,	49300	19000	28000	1.04	1.16
July,	34200	12500	23100	.86	.99
August,	13700	6200	9570	.36	.41
September,	48400	5760	19700	.74	.82
October,	39400	14400	22800	.85	.98
November,	81400	26300	44300	1.65	1.84
December,	217000	20400	74600	2.78	3.20
The year,	248000	5760	41600	1.55	21.15

*Values for entire year are excellent.

†Discharge during frozen periods estimated on the basis of discharge in adjacent drainages and an intercomparison of the discharge at various points in Susquehanna River drainage. Discharge for days of missing gage heights estimated on the basis of the discharge at Harrisburg, for days given below; for all other days discharge interpolated.

	Second-feet.
Discharge January 25 to 31,	44,300
Discharge February 1 to 25,	22,400
Discharge March 25,	150,000
Discharge June 30,	21,000
Discharge July 1 to 4,	32,500
Discharge August 6 to 9,	10,200
Discharge December 15,	100,000
Discharge December 25,	130,000

ESTIMATED MONTHLY DISCHARGE OF SUSQUEHANNA RIVER, AT McCALL'S FERRY, LANCASTER COUNTY.

(Drainage area, 26766 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
†1908.					
January,	117930		57360	2.14	2.47
February,	281000		70100	2.61	2.82
March,	297000	46600	138000	5.15	5.94
April,	160000	43800	66100	2.47	2.76
May,	180000	42900	92700	3.46	3.99
June,	57600	10800	23900	.89	1.00
July,	48400	7600	15600	.58	.67
August,	15600	7120	9510	.36	.41
September,	7600	2690	4590	.17	.19
October,	11300	2950	6250	.23	.27
November,	9120	2950	6200	.23	.26
December,	11900	2950	6900	.26	.30
The year,	297000	2690	41400	1.55	21.08
1909.					
January,	141000	5760	33500	1.25	1.44
February,	224000	21100	90200	3.37	3.51
March,	108000	27100	54300	2.03	2.34
April,	164000	44700	72600	2.71	3.02
May,	297000	21100	76300	2.85	3.29
June,	49300	18300	33100	1.24	1.38
July,	19000	6200	9170	.34	.39
August,	7120	3230	5120	.19	.22
September,	6650	2690	4550	.17	.19
October,	6650	2950	4720	.18	.20
November,	6650	2950	4540	.17	.19
December,	25600	2200	8010	.30	.34
The year,	297000	2200	32600	1.22	16.51

†Discharge during frozen periods estimated on the basis of discharge in adjacent drainages and an intercomparison of discharge at various points in Susquehanna River drainage. Discharge for days of missing gage heights estimated on the basis of the discharge at Harrisburg for days given below; for all other days discharge interpolated.

	Second-feet.
Discharge January 11 to 12,	35,000
Discharge January 26 to 31,	30,000
Discharge February 1 to 14,	18,600
Discharge April 12,	85,000
Discharge April 22,	82,000

OCTORARO CREEK.

DESCRIPTION OF BASIN.

Octoraro Creek rises in two branches, in Lancaster and Chester Counties, Penna., the west branch, rising in northern Bart Township, Lancaster County, and the east branch in the northwest corner of Highland Township, Chester County. The west branch flows in a generally southerly direction, while the east branch flows in a generally westerly direction, forming the creek proper a short distance above Pine Grove village, Lancaster County. The west branch has a drainage area of 50 square miles, all of which lies in Lancaster County and the east branch an area of 95 square miles, 39 of which is in Lancaster County and 56 in Chester County.

The creek proper flows in a southwesterly direction to its mouth in the Susquehanna River near Octoraro Junction, its length being approximately 17 miles, 12 of which lie in Pennsylvania. Below the junction of the east and west branches the creek forms the boundary line between Lancaster and Chester Counties. Octoraro Creek drains approximately 271 square miles, 176 of which are in Pennsylvania.

The creek flows through an agricultural region which is densely populated. There are few tributaries, most of which are small runs. The main creek and the west branch are used for industrial water supply purposes but are not used for public domestic supplies.

The mean annual precipitation over this watershed is from 45 to 50 inches.

The discharge of this stream was measured from November, 1896, to September 30, 1899, at Rowlandsville, Md.

SUSQUEHANNA BASIN—STATION NO. 27.

OCTORARO CREEK AT ROWLANDSVILLE, MD.

DESCRIPTION OF STATION.

This station was established by the United States Geological Survey on November 21st, 1896, at the wagon bridge in the village of Rowlandsville, Md. It was discontinued on September 30th, 1899.

Discharge measurements were made from the downstream side of the bridge, the initial point for soundings being the end of the handrail on the downstream side at the left bank.

A wire gage was attached to the floor timbers on the upper side of the bridge, the scale being a 14 foot board, painted white and graduated to tenths of a foot. The elevation of zero was arbitrary datum. A bench mark was a cross cut in top of cap-stone on the lower side of the bridge abutment on the left bank of the stream and was 17.67 feet above gage datum. The gage was read by Hugh W. Caldwell.

This station was not a model one for taking discharge measurements, owing to an eddy along the left bank and the proximity of the mouth of a small tributary which would cause cross currents in times of high water.

During the operation of this station 52 discharge measurements were made.

The following data have been furnished by the United States Geological Survey:

DISCHARGE MEASUREMENTS OF OCTORARO CREEK, AT ROWLANDSVILLE, MARYLAND.

(Drainage area, 217 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1896.							
1	Nov. 21,	Caldwell,	------	------	------	3.00	138	
	1897.							
2	Jan. 23,	Davis,	85	251	1.00	3.42	248	
3	July 21,	do.	------	270	0.98	3.45	264	
4	Aug. 16,	Caldwell,	------	253	0.69	3.10	175	
5	Aug. 31,	do.	------	233	0.59	2.80	138	
6	Sept. 18,	do.	------	322	0.61	2.90	136	
7	Oct. 22,	do.	------	227	0.60	3.10	138	
8	Nov. 2,	do.	------	526	3.50	6.00	1,843	
9	Nov. 3,	do.	------	310	1.43	4.00	444	

DISCHARGE MEASUREMENTS OF OCTORARO CREEK AT ROWLANDSVILLE, MARYLAND.

(*Drainage area 217 square miles.*)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1898.							
10	Jan. 8,	Caldwell.				3.40	201	
11	Jan. 26.	do.				4.00	430	
12	Feb. 12.	do.				3.70	360	
13	Feb. 21,	do.				4.90	934	
14	Feb. 22,	do.				4.10	428	
15	Feb. 23,	do.				3.90	339	
16	Mar. 12,	do.				3.60	236	
17	May 24,	do.				4.10	416	
18	May 28,	do.				3.70	362	
19	June 20,	do.				4.30	426	
20	June 22,	do.				3.5	214	
21	July 5,	do.				4.1	424	
22	July 12,	do.				3.3	211	
23	July 19,	do.				3.8	288	
24	Aug. 3,	do.				3.4	225	
25	Aug. 12,	do.				3.80	289	
26	Aug. 25,	do.				6.4	1,663	
27	Sept. 30,	do.				3.50	209	
28	Oct. 6,	Paul,				3.60	182	
29	Oct. 17,	Caldwell,				3.30	200	
30	Oct. 22,	do.				3.70	287	
31	Nov. 26,	do.				4.10	420	
32	Dec. 7,	do.				6.40	1,557	
33	Dec. 26,	do.				4.20	434	
	1899.							
34	Jan. 24,	Caldwell,				6.40	1,505	
35	Feb. 4,	do.				4.40	531	
36	Mar. 15,	do.				5.00	666	
37	Mar. 31,	do.				4.80	722	
38	April 15,	do.				4.30	507	
39	April 21,	do.				4.20	470	
40	May 8,	do.				4.50	538	
41	May 20,	do.				4.00	413	
42	June 5,	do.				3.80	333	
43	June 16,	do.				3.70	189	
44	June 28,	do.				3.50	185	
45	June 29,	do.				4.00	387	
46	July 15,	do.				3.50	219	
47	July 28,	do.				3.40	186	
48	Aug. 7,	do.				3.50	171	
49	Aug. 11,	do.				5.20	1,044	
50	Aug. 19,	do.				3.40	144	
51	Aug. 28,	do.				3.60	206	
52	Sept. 25,	do.				5.60	1.113	

DISCHARGE TABLE FOR OCTORARO CREEK, AT ROWLANDSVILLE, MARYLAND, FOR 1897.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
2.70	125	.50	240	.60	670	.20	2055	.60	3525
.80	130	.60	270	.80	765	.40	2265	.80	3735
.90	135	.70	305	5.00	880	.60	2475	8.00	3945
3.00	145	.80	340	.20	1040	.80	2685	.50	4470
.10	155	.90	380	.40	1220	7.00	2895	9.00	4995
.20	170	4.00	420	.60	1425	.20	3105	.50	5520
.30	185	.20	500	.80	1635	.40	3315	10.00	6045
.40	210	.40	580	6.00	1845				

DISCHARGE TABLE FOR OCTORARO CREEK, AT ROWLANDSVILLE, MARYLAND, FOR 1898.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec..ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
2.70	120	.20	480	.70	1325	.20	2165	.70	3010
.80	125	.30	535	.80	1380	.30	2225	.80	3065
.90	137	.40	590	.90	1435	.40	2280	.90	3125
3.00	150	.50	650	6.00	1490	.50	2335	9.00	3180
.10	165	.60	705	.10	1550	.60	2390	.10	3235
.20	180	.70	760	.20	1605	.70	2450	.20	3290
.30	200	.80	815	.30	1660	.80	2505	.30	3350
.40	220	.90	875	.40	1715	.90	2560	.40	3405
.50	245	5.00	930	.50	1775	8.00	2615	.50	3460
.60	270	.10	985	.60	1830	.10	2675	.60	3515
.70	300	.20	1040	.70	1885	.20	2730	.70	3575
.80	330	.30	1100	.80	1940	.30	2785	.80	3630
.90	360	.40	1155	.90	2000	.40	2840	.90	3685
4.00	390	.50	1210	7.00	2055	.50	2900	10.00	3740
.10	425	.60	1265	.10	2110	.60	2955		

DISCHARGE TABLE FOR OCTORARO CREEK, AT ROWLANDSVILLE, MARYLAND, FOR 1899.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
3.10	95	.10	425	5.00	815	.90	1262	.80	1736
.20	110	.20	465	.10	860	6.00	1314	.90	1790
.30	130	.30	505	.20	910	.10	1366	7.00	1844
.40	155	.40	545	.30	960	.20	1418	.10	1898
.50	185	.50	590	.40	1010	.30	1470	.20	1952
.60	225	.60	635	.50	1060	.40	1522	.30	2006
.70	265	.70	680	.60	1110	.50	1574	.40	2060
.80	305	.80	725	.70	1160	.60	1628	.50	2114
.90	345	.90	770	.80	1210	.70	1682		
4.00	385								

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF OCTORARO CREEK, AT ROWLANDSVILLE, MARYLAND.

1896. Day.	NOV.		DEC.	
	G H	Dis.	G H	Dis.
1,			3.45	227
2,			3.25	177
3,			3.20	170
4,			3.20	170
5,			3.20	170
6,			3.20	170
7,			3.20	170
8,			3.20	170
9,			3.20	170
10,			3.20	170
11,			3.15	162
12,			3.10	155
13,			3.10	155
14,			3.10	155
15,			3.10	155
16,			3.10	155
17,			3.10	155
18,			3.10	155
19,			3.00	145
20,			3.00	145
21,			3.00	145
22,	3.00	145	3.00	145
23,	3.00	145	3.00	145
24,	3.00	145	3.00	145
25,	3.00	145	3.00	145
26,	3.00	145	3.00	145
27,	3.00	145	3.00	145
28,	3.20	170	3.00	145
29,	4.30	540	3.00	145
30,	3.75	322	3.00	145
31,			3.10	155

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF OCTORARO CREEK, AT ROWLANDSVILLE, MARYLAND.

1897.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1, ...	3.10	155	3.20	170	3.45	225	3.30	185	3.40	210	3.40	210	3.00	145	3.40	210	2.80	130	2.80	130	3.10	155	3.30	185
2, ...	3.10	155	3.20	170	3.60	270	3.30	185	3.40	210	3.40	210	3.00	145	3.30	185	2.80	130	2.80	130	6.00	1845	3.40	210
3, ...	3.10	155	4.80	765	3.50	240	3.30	185	3.60	270	3.40	210	3.00	145	3.30	185	2.80	130	2.80	130	4.15	480	3.45	225
4, ...	3.10	155	3.55	255	3.50	240	3.30	185	3.50	240	3.40	210	3.00	145	3.30	185	2.80	130	2.80	130	3.70	305	3.60	270
5, ...	3.15	162	3.45	225	3.50	240	3.30	185	3.40	210	5.45	1270	3.00	145	3.30	185	2.80	130	2.80	130	3.40	210	4.35	560
6, ...	3.10	155	8.68	4680	3.45	225	3.30	185	3.30	185	3.70	305	2.90	135	3.20	170	2.80	130	2.80	130	3.40	210	3.70	305
7, ...	3.10	155	10.10	6150	3.40	210	3.30	185	3.30	185	3.70	305	2.90	135	3.20	170	2.80	130	2.80	130	3.30	185	3.45	225
8, ...	3.10	155	9.20	5205	3.40	210	3.30	185	3.30	185	3.45	225	2.90	135	3.20	170	2.80	130	2.80	130	3.65	287	3.30	185
9, ...	3.10	155	7.50	3420	3.30	185	4.00	670	3.20	170	3.40	210	2.90	135	3.30	185	2.80	130	2.80	130	3.50	240	3.30	185
10, ...	3.10	155	5.40	1220	3.30	185	5.50	1320	3.20	170	3.30	185	2.90	135	3.30	185	2.80	130	2.80	130	3.60	270	3.30	185
11, ...	3.10	155	3.50	240	3.30	185	6.15	2002	3.20	170	3.30	185	2.90	135	5.10	960	2.80	130	2.90	135	3.70	305	3.60	270
12, ...	3.10	155	3.35	197	3.20	170	5.65	1477	3.20	170	3.30	185	2.90	135	3.40	210	2.80	130	2.85	132	3.45	225	3.40	210
13, ...	3.10	155	3.30	185	3.20	170	4.55	647	4.85	792	3.30	185	2.90	135	3.30	185	2.80	130	2.80	130	3.85	197	3.30	185
14, ...	3.10	155	3.30	185	3.20	170	3.85	360	5.00	880	3.20	170	2.90	135	3.20	170	2.80	130	2.80	130	3.30	185	4.65	692
15, ...	3.10	155	3.40	210	3.20	170	3.60	270	5.00	880	3.20	170	2.90	135	3.10	155	2.80	130	2.80	130	3.20	170	4.90	820
16, ...	3.10	155	4.55	647	3.20	170	3.50	240	3.75	322	3.20	170	2.90	135	3.10	155	2.80	130	2.80	130	3.20	170	3.95	400
17, ...	3.10	155	4.05	440	3.20	170	3.50	240	3.55	255	3.20	170	2.90	135	3.10	155	3.05	150	2.80	130	3.20	170	3.70	305
18, ...	3.10	155	3.55	255	3.40	210	3.45	225	3.40	210	3.20	170	2.90	135	3.00	145	2.90	135	2.80	130	3.30	185	3.60	270
19, ...	3.10	155	3.60	270	4.15	480	3.45	225	3.30	185	3.20	170	3.10	155	2.90	135	2.90	135	2.90	135	3.30	185	3.60	270
20, ...	3.10	155	3.40	210	3.60	270	3.40	210	3.30	185	3.20	170	3.10	155	2.90	135	2.90	135	2.90	135	3.30	185	3.50	240
21, ...	6.70	2580	3.45	225	3.40	210	3.30	185	3.40	210	3.20	170	3.75	322	3.05	150	2.80	130	3.00	145	3.20	170	3.50	240
22, ...	6.65	2527	3.45	225	3.40	210	3.30	185	3.65	287	3.20	170	3.85	360	3.05	150	2.80	130	3.05	150	3.20	170	3.40	210
23, ...	4.45	602	6.00	1845	3.40	210	3.20	170	3.40	210	3.10	155	3.55	255	3.00	145	3.20	170	3.20	170	3.20	170	3.30	185
24, ...	3.30	185	3.80	340	4.20	500	3.20	170	3.40	210	3.10	155	3.40	210	3.00	145	3.20	170	3.20	170	3.20	170	3.30	185
25, ...	3.20	170	3.45	225	3.95	400	3.20	170	5.05	920	3.10	155	3.30	185	3.00	145	3.10	155	3.20	170	3.20	170	3.30	185
26, ...	3.20	170	3.35	197	3.55	255	3.20	170	4.80	765	3.10	155	3.30	185	3.00	145	3.00	145	3.20	170	3.20	170	3.35	197
27, ...	3.20	170	3.40	210	3.40	210	3.20	170	3.90	380	3.10	155	4.25	520	2.90	135	3.00	145	3.20	170	4.85	792	3.50	240
28, ...	3.20	170	3.40	210	3.30	185	3.20	170	3.50	240	3.10	155	3.95	400	2.90	135	3.00	145	3.10	155	4.10	460	3.50	240
29, ...	3.20	170	------	------	3.30	185	3.20	170	3.40	210	3.00	145	3.65	287	2.80	130	2.90	135	3.10	155	3.65	287	3.40	210
30, ...	3.20	170	------	------	3.30	185	3.20	170	3.40	210	3.00	145	3.50	240	2.80	130	2.80	130	3.00	145	3.40	210	3.40	210
31, ...	3.20	170	------	------	3.30	185	------	------	3.40	210	------	------	3.40	210	2.80	130	------	------	3.00	145	------	------	3.50	240

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF OCTORARO CREEK, AT ROWLANDSVILLE, MARYLAND.

1898. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.40	220	3.70	300	3.60	270	4.10	425	3.90	360	3.90	360	3.40	220	3.30	200	3.30	200	3.40	220	3.40	220	4.60	705
2,	3.60	270	3.70	300	3.60	270	4.00	390	3.80	330	3.80	330	3.30	200	3.30	200	3.30	200	3.40	220	3.75	787	4.60	705
3,	3.60	270	3.70	300	3.60	270	3.90	360	8.30	330	3.80	330	3.30	200	3.40	220	3.30	200	3.40	220	4.55	677	4.50	650
4,	3.50	245	3.75	315	3.60	270	3.80	330	3.70	300	3.70	300	3.80	330	5.85	1407	3.30	200	3.40	220	4.55	677	4.75	787
5,	3.45	232	3.70	300	3.50	245	3.80	330	3.75	315	3.70	300	3.70	300	4.90	875	3.30	200	3.40	220	4.55	677	9.25	3320
6,	3.40	220	3.70	300	3.50	245	3.80	330	3.80	330	3.70	300	3.50	245	4.35	562	3.30	200	3.40	220	4.90	875	8.40	2840
7,	3.40	220	3.60	270	3.50	245	3.70	300	4.25	507	3.70	300	3.40	220	3.95	375	3.45	232	3.30	200	4.50	650	6.70	1885
8,	3.40	220	3.65	285	3.50	245	3.70	300	4.30	535	3.60	270	3.40	220	3.85	345	3.90	360	3.30	200	4.05	407	5.90	1435
9,	3.40	220	3.65	285	3.50	245	3.70	300	4.05	407	3.60	270	3.40	220	4.00	390	3.50	245	3.30	200	3.90	330	5.30	1100
10,	3.40	220	3.65	285	3.50	245	3.60	270	3.80	330	3.60	270	3.30	200	4.50	650	3.50	245	3.30	200	3.75	315	4.90	875
11,	3.40	220	3.60	270	3.50	245	3.60	270	3.85	345	3.50	245	3.30	200	3.45	232	3.50	245	3.40	220	3.60	270	3.65	285
12,	3.55	257	3.50	245	3.50	245	3.60	270	4.25	507	3.50	245	3.30	200	3.80	330	3.40	220	3.40	220	3.50	245	3.60	270
13,	4.30	535	3.50	245	3.50	245	3.60	270	4.10	425	3.50	245	3.30	200	3.70	300	3.40	220	3.40	220	3.85	345	3.60	270
14,	3.60	270	3.50	245	3.50	245	3.50	245	4.10	425	3.50	245	3.30	200	3.55	257	3.40	220	3.40	220	3.65	285	3.60	270
15,	4.40	590	3.50	245	3.50	245	3.50	245	4.25	507	3.50	245	3.30	200	3.50	245	3.30	200	3.40	220	3.60	270	3.50	245
16,	4.60	705	3.50	245	3.50	245	3.50	245	5.00	930	3.50	245	3.30	200	3.60	270	3.30	200	3.30	200	3.60	270	3.50	245
17,	3.85	345	3.40	220	3.50	245	3.50	245	5.25	1070	3.50	245	3.30	200	3.70	300	3.30	200	3.30	200	4.70	760	3.50	245
18,	3.45	232	3.45	232	3.50	245	3.50	245	4.95	902	3.50	245	3.30	200	4.50	650	3.30	200	3.30	200	4.90	875	3.50	245
19,	3.40	220	3.90	360	3.50	245	3.50	245	4.55	677	3.50	245	3.55	257	4.25	507	3.30	200	3.30	200	6.20	1605	3.90	360
20,	3.75	315	5.10	985	3.50	245	3.50	245	4.85	845	4.35	562	3.55	257	3.80	330	3.20	180	3.30	200	5.70	1325	9.05	3207
21,	3.85	345	4.60	705	3.50	245	3.50	245	4.90	875	3.75	315	3.35	210	3.50	245	3.20	180	3.95	375	5.15	1012	7.80	2505
22,	3.50	245	3.95	375	3.60	270	3.50	245	4.50	650	3.70	300	3.30	200	3.50	245	3.20	180	3.65	285	4.95	902	6.05	1520
23,	4.30	535	3.80	330	3.80	330	4.30	535	4.25	507	3.70	300	3.30	200	3.50	245	4.10	425	3.50	245	4.65	732	6.75	1912
24,	3.80	330	3.80	330	4.10	425	4.10	425	4.20	480	3.60	270	3.30	200	3.50	245	3.80	330	3.40	220	4.70	760	4.35	562
25,	3.65	285	3.70	300	5.10	985	3.90	360	4.35	562	3.60	270	3.30	200	6.35	1687	3.60	270	3.40	220	4.35	562	4.30	535
26,	4.00	390	3.70	300	3.80	330	4.05	407	4.10	425	3.60	270	3.30	200	3.85	345	3.40	220	3.40	220	4.10	425	4.20	480
27,	3.70	300	3.60	270	3.70	300	4.15	452	4.80	815	3.50	245	3.30	200	3.70	300	4.20	480	3.35	210	4.90	875	4.10	425
28,	3.55	257	3.60	270	3.70	300	4.00	390	4.05	407	3.50	245	3.95	375	3.60	270	3.90	360	3.60	270	4.75	787	4.00	390
29	3.50	245			3.75	315	4.00	390	4.00	390	3.45	232	3.85	345	3.45	232	3.55	257	3.55	257	4.80	815	4.00	390
30,	3.50	245			4.65	732	3.90	360	3.90	360	3.40	220	3.45	232	3.30	200	3.45	232	3.50	245	4.70	760	3.90	360
31,	3.60	270			4.30	535			3.90	360			3.70	300	3.30	200			3.40	220			4.15	452

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF OCTORARO CREEK, AT ROWLANDSVILLE, MARYLAND.

1899.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.60	635	3.9	345	4.3	505	4.5	590	4.0	385	3.8	305	3.5	185	3.35	142	3.5	185
2,	4.8	725	4.0	385	4.45	567	4.4	545	4.0	385	3.8	305	3.4	155	3.3	130	3.45	170
3,	4.95	792	4.0	385	4.5	590	4.2	465	4.0	385	3.8	305	3.4	155	3.25	120	3.4	155
4,	4.8	725	4.3	505	4.8	725	4.1	425	4.0	385	3.7	265	3.4	155	3.3	130	3.3	130
5,	4.95	792	4.4	545	7.45	2087	4.0	385	4.0	385	3.7	265	3.55	205	3.3	130	3.2	110
6,	5.45	1035	4.4	545	6.7	1682	3.9	345	4.0	385	3.7	265	3.9	345	3.3	130	3.15	102
7,	5.55	1085	4.3	505	5.75	1185	5.3	960	4.0	385	3.6	225	3.6	225	3.55	205	3.2	110
8,	4.8	725	4.1	425	5.15	885	5.05	837	4.35	525	3.75	285	3.85	325	3.4	155	3.2	110
9,	4.55	612	4.0	385	4.5	590	4.85	747	4.35	525	3.75	287	3.85	325	3.35	142	3.4	155
10,	4.5	590	3.9	345	4.05	405	4.75	702	4.05	405	3.9	345	3.55	205	5.3	960	3.4	155
11,	4.5	590	3.85	325	3.8	305	4.65	657	4.2	465	3.75	285	3.5	185	3.55	205	3.45	170
12,	4.3	505	4.2	465	3.75	285	4.3	505	4.25	485	3.7	265	3.45	170	3.45	170	3.7	265
13,	4.75	702	4.85	747	6.3	1470	4.3	505	4.05	405	3.7	265	3.45	170	3.45	170	3.5	185
14,	4.4	545	5.0	815	4.6	635	4.3	505	4.15	445	3.7	265	3.45	170	3.4	155	3.4	155
15,	4.3	505	4.7	680	5.15	885	4.3	505	4.0	385	3.7	265	3.5	185	3.4	155	3.4	155
16,	4.25	485	4.65	657	4.7	680	4.2	465	4.05	405	3.7	265	3.5	185	3.4	155	3.3	130
17,	4.15	445	7.2	1952	4.4	545	4.25	485	4.0	385	3.65	245	3.4	155	3.4	155	3.3	130
18,	4.0	385	6.9	1790	4.3	505	4.2	465	4.25	485	3.6	225	3.55	205	3.4	155	3.3	130
19,	3.9	345	6.8	1736	4.25	485	4.2	465	4.05	405	3.6	225	3.45	170	3.4	155	3.35	142
20,	3.85	325	6.45	1548	4.2	465	4.2	465	4.0	385	3.6	225	3.4	155	3.3	130	3.85	325
21,	3.7	265	6.15	1392	4.05	405	4.2	465	4.0	385	3.65	245	3.35	142	3.25	120	3.7	265
22,	3.7	265	5.75	1185	4.0	385	4.2	465	3.95	365	3.6	225	3.35	142	3.4	155	3.6	225
23,	3.6	225	5.5	1060	4.0	385	4.2	465	3.9	345	3.5	185	3.3	130	3.35	142	3.35	142
24,	6.3	1470	5.25	935	3.9	345	4.1	425	3.9	345	3.5	185	3.35	142	3.3	130	3.3	120
25,	6.1	1366	5.05	837	5.2	910	4.1	425	3.85	325	3.65	245	3.3	130	3.3	130	3.5	185
26,	5.6	1110	5.55	1085	4.7	680	4.1	425	3.8	305	3.65	245	3.65	245	3.3	130	6.3	1470
27,	4.9	770	5.05	837	4.5	590	4.0	385	3.8	305	3.5	185	[illegible]	245	3.5	185	4.95	792
28,	4.45	567	4.55	612	6.95	1817	4.0	385	3.8	305	3.5	185	3.4	155	3.55	205	4.65	657
29,	4.25	485	------	------	5.6	1110	4.0	385	3.8	305	3.8	305	3.4	155	3.5	185	4.0	385
30,	4.1	425	------	------	5.0	815	4.0	385	3.85	325	3.6	225	3.4	155	3.5	185	4.15	445
31,	4.05	405	------	------	4.8	725	------	------	3.8	305	------	------	3.4	155	3.5	185	------	------

ESTIMATED MONTHLY DISCHARGE OF OCTORARO CREEK, AT ROWLANDSVILLE, MARYLAND.

(Drainage area, 217 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1896.					
November 22-30,	540	145	192	0.89	0.29
December,	225	145	158	0.73	0.84
1897.					
January,	2580	155	329	1.52	1.75
February,	6150	170	1021	4.71	4.90
March,	500	170	230	1.06	1.22
April,	2002	170	370	1.71	1.91
May,	920	170	321	1.48	1.71
June,	1270	145	222	1.02	1.14
July,	520	135	192	.88	1.01
August,	960	130	186	.86	.99
September,	170	130	136	.63	.70
October,	170	130	141	.65	.75
November,	1845	155	298	1.37	1.53
December,	820	185	275	1.27	1.46
The year,	6150	130	310	1.43	19.07
1898.					
January,	705	220	306	1.41	1.63
February,	985	220	325	1.50	1.56
March,	985	245	315	1.45	1.67
April,	535	245	322	1.48	1.65
May,	1070	300	523	2.41	2.78
June,	562	220	282	1.30	1.45
July,	375	200	230	1.06	1.22
August,	1687	200	415	1.91	2.20
September,	480	180	243	1.12	1.25
October,	375	200	225	1.04	1.20
November,	1605	220	650	3.00	3.35
December,	3320	245	951	4.38	5.05
The year,	3320	180	399	1.84	25.01
1899.					
January,	1470	225	642	2.96	3.41
February,	1952	325	822	3.79	3.95
March,	2087	285	763	3.52	4.06
April,	960	345	508	2.34	2.61
May,	525	305	388	1.79	2.06
June,	345	185	254	1.17	1.31
July,	345	130	188	0.87	1.00
August,	960	120	181	0.83	0.95
September,	1470	102	262	1.21	1.35

DEER CREEK.

DESCRIPTION OF BASIN.

Deer Creek rises in the southern part of York County, Penna., and flows in a generally southeasterly direction into the Susquehanna River, near Stafford, Harford County, Md. It is about 35 miles long and drains an area of 128 square miles, 28 square miles of which lie in Pennsylvania. The elevation of its source is 850 feet above sea level, while at its mouth it is 20 feet. Its course lies in a narrow valley ranging from 100 to 300 feet below a rolling plateau area, well covered with farms. There are numerous small tributaries, the largest of which are Little Deer, Falling Branch and Big Branch Creeks, the latter two of which lie in Pennsylvania.

The mean annual precipitation over this watershed is from 35 to 40 inches.

The discharge of this stream was measured from December 14th, 1904, to March 31st, 1909, at Churchville, Md.

SUSQUEHANNA BASIN—STATION NO. 28

DEER CREEK AT CHURCHVILLE, MD.

DESCRIPTION OF STATION.

This station, established December 14th, 1904, by the United States Geological Survey, was located at the highway bridge about three miles north of Churchville, Md., on the Deer Creek Road. This station was discontinued March 31st, 1909.

The channel is straight for 500 feet above and below the station. The bed is generally smooth and is composed of sand and a few boulders and is practically permanent. There is a good velocity at all stages.

Discharge measurements are made from the downstream side of the bridge, initial point for soundings being on the right bank at the end of the inclined end posts, downstream side of the bridge.

A standard chain gage is attached to the bridge. The length of the chain from the end of the weight to the marker is 15.20 feet. The gage is read twice daily. Bench mark No. 1 is a chiselled square on the downstream end of the right abutment, elevation, 14.10 feet. Bench mark No. 2 is top of eyebar of bottom chord in middle of second panel from the right bank, elevation, 14.68 feet.

The discharge is often affected by ice during the winter period.

During the operation of this station six discharge measurements were made.

The following data has been furnished by the United States Geological Survey:

DISCHARGE MEASUREMENTS OF DEER CREEK, AT CHURCHVILLE, MARYLAND.

(Drainage area, 141 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1904.							
1.	Nov. 8,	Grover,	70	86	0.85	1.48	73	
	1905.							
2.	June 23,	Grover & Lyman,	89	170	1.22	2.05	208	
3.	Nov. 2,	Harley,	89	150	0.79	1.81	119	
	1906.							
4.	Mar. 17,	Follansbee and Henshaw,	91	185	1.26	2.20	233	
5.	Mar. 30,	Henshaw,	91	219	1.74	2.54	380	
6.	April 10,	Henshaw,	92	282	2.47	3.11	696	

DISCHARGE TABLE FOR DEER CREEK, AT CHURCHVILLE, MARYLAND, FROM 1904 TO 1908.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.50	72	.50	355	.50	920	.50	1710	.50	2700
.60	87	.60	400	.60	990	.60	1800	.60	2810
.70	105	.70	445	.70	1060	.70	1890	.70	2920
.80	126	.80	495	.80	1135	.80	1985	.80	3030
.90	150	.90	550	.90	1210	.90	2080	.90	3145
2.00	178	3.00	605	4.00	1290	5.00	2180	6.00	3260
.10	209	.10	665	.10	1370	.10	2280	7.00	4460
.20	242	.20	725	.20	1450	.20	2380	8.00	5760
.30	277	.30	790	.30	1535	.30	2480	9.00	7060
.40	315	.40	855	.40	1620	.40	2590	10.00	8460

Note:—The above table is not applicable for ice or obstructed channel conditions. It is based on six discharge measurements made during 1904-1906 and is well defined between gage heights 1.5 and 3.5 feet.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DEER CREEK, AT CHURCHVILLE, MARYLAND.

1905.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.85	138	2.1		2.05	194	2.1	209	2.0	178	1.95	164	1.65	96	1.8	126	1.92	156	1.7	105	1.78	122	1.85	138
2,	1.9	150	2.1		1.95	164	2.1	209	1.9	150	1.8	126	2.0	178	1.75	116	1.95	164	1.7	105	1.75	116	1.8	126
3,	1.9	150	2.1		2.05	194	2.1	209	1.9	150	1.8	126	2.02	184	1.72	109	3.5	920	1.92	156	1.82	131	3.5	920
4,	1.65	96	2.1		2.0	178	2.2	242	1.9	150	1.8	126	1.75	116	1.7	105	2.38	307	1.8	126	1.8	126	2.32	285
5,	1.95	164	2.1		2.45	335	2.6	400	1.9	150	1.8	126	1.72	109	1.65	96	2.22	249	1.75	116	1.8	126	2.0	178
6,	2.0	178	2.25		2.2	242	2.85	522	1.9	150	1.75	116	2.8	495			2.05	194	1.72	109	1.82	131	1.95	164
7,	5.95	3200	2.2		2.25	200	2.3	277	2.1	209	2.25	200	2.2	242	1.68	101	2.0	178	1.7	105	1.78	122	1.9	150
8,	2.5	355	2.2		2.2	242	2.2	242	2.0	178	2.0	178	2.3	277	1.75	116	2.0	178	1.7	105	1.78	122	1.9	150
9,	2.2	242	2.2		3.5	920	2.1	209	1.9	150	1.85	138	2.0	178	2.18	235	2.0	178	1.7	105	1.82	131	1.9	150
10,	2.1	209	2.2		3.55	955	2.1	209	1.9	150	1.8	126	1.8	126	1.82	131	2.0	178	1.72	109	1.8	126	1.9	150
11,	2.0	178	2.2		2.8	495	3.05	635	1.9	150	1.8	126	1.82	131	1.8	126	2.05	194	1.85	138	1.8	126	1.85	138
12,	2.45	335	2.2		2.55	378	2.45	335	1.9	150	2.45	335	1.78	122	1.75	116	2.35	296	2.38	307	1.75	116	1.85	138
13,	2.35	296	2.9		2.4	315	2.75	470	1.85	138	2.0	178	1.92	156	2.55	378	2.02	184	1.92	155	1.78	122	1.85	138
14,	2.0	178	2.55		2.35	296	2.2	242	1.9	150	1.85	138	1.85	138	1.92	156	1.92	156	1.8	126	1.78	122	1.8	126
15,	2.1	209	2.3		2.25	260	2.1	209	2.05	194	1.8	126	1.8	126	1.9	150	1.9	150	1.75	116	1.75	116	1.82	131
16,	2.3	277	2.3		2.25	260	2.1	209	2.05	194	1.8	126	1.75	116	2.08	203	1.9	150	1.75	116	1.78	122	1.75	116
17,	2.1	209	2.3		2.3	277	2.0	178	1.9	150	1.75	110	1.7	105	1.82	131	2.2	242	1.75	116	1.78	122	1.85	138
18,	2.1	209	2.3		2.25	260	2.15	226	2.2	242	1.7	105	1.7	105	1.75	116	2.08	203	1.75	116	1.75	116	1.95	164
19,	2.0	178	2.3		2.35	296	2.2	242	1.85	138	1.7	105	1.7	105	1.7	105	1.95	164	1.78	122	1.75	116	1.88	145
20,	2.0	178	2.3		2.95	578	2.1	209	1.8	126	1.7	105	1.65	96	1.7	105	1.9	150	3.35	822	1.78	122	1.85	138
21,	1.9	150	2.3		3.4	855	2.1	209	1.8	126	1.7	105	1.65	96	1.7	105	1.85	138	2.1	209	1.78	122	5.05	2230
22,	1.8	126	2.4		2.8	495	2.1	209	1.8	126	2.0	178	1.65	96	2.05	194	1.85	138	2.0	178	1.75	116	2.4	315
23,	1.75	116	2.3	277	2.45	335	2.0	178	1.8	126	2.0	178	2.0	178	1.75	116	1.8	126	1.92	156	1.75	116	2.18	235
24,	1.7	105	2.3	277	2.3	277	2.0	178	1.8	126	2.15	226	2.42	323	1.72	109	1.8	126	1.82	131	1.75	116	2.05	194
25,	1.5	72	2.3	277	3.5	920	2.0	178	1.7	105	1.9	150	1.82	131	5.48	2678	1.82	131	2.1	209	1.78	122	1.98	172
26,	1.6		3.15	695	2.55	378	2.0	178	1.7	105	1.8	126	1.7	105	2.98	594	1.8	126	2.3	277	1.7	105	1.92	156
27,	2.3		2.9	550	2.45	335	2.15	226	1.75	116	1.7	105	1.7	105	2.35	296	1.8	126	2.08	203	1.7	105	1.95	164
28,	2.25		2.25	260	2.3	277	2.1	209	1.8	126	1.7	105	1.7	105	2.18	235	1.75	116	1.95	164	1.72	109	1.9	150
29,	2.1				2.2	242	2.05	194	1.75	116	1.65	96	2.05	194	2.1	209	1.75	116	1.85	138	2.42	323	2.62	409
30,	2.15				2.2	242	2.0	178	1.8	126	1.65	96	2.35	296	2.05	194	1.7	105	1.88	145	2.15	226	2.15	226
31,	2.1				2.2	242			2.35	296			2.05	194	2.0	178			1.85	138			2.0	178

Note:—From January 26 to February 27 creek was frozen entirely across from the dam to a point 200 feet below the gage; thickness of ice 0.9 foot. During this period occasional readings to the water surface in a hole in the ice were taken and coincided very nearly with the readings to the top of the ice. From February 22 to March 4 the ice was melting and going out.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DEER CREEK, AT CHURCHVILLE, MARYLAND.

1906. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.0	178	2.0	178	2.05	194	2.32	285	2.22	249	2.0	178	1.75	116	1.9	150	1.8	126	1.6	87	1.9	150	1.7	105
2,	1.9	150	1.9	150	2.05	194	2.28	270	2.2	242	1.95	164	1.8	126	1.95	164	1.75	116	1.6	87	1.95	164	1.75	116
3,	1.95	164	1.8	126	2.9	550	2.2	242	2.2	242	1.92	156	1.78	122	1.9	150	1.7	105	1.6	87	1.92	155	1.72	109
4,	3.25	758	2.0	178	3.4	855	2.22	249	2.18	235	1.9	150	3.1	665	1.92	155	1.7	105	1.82	131	1.92	155	1.72	109
5,	2.28	270	1.95	164	2.55	378	2.2	242	2.15	226	1.9	150	1.95	164	1.75	116	1.7	105	2.5	355	1.9	150	1.7	105
6,	2.2	242	1.98	173	2.38	307	2.2	242	2.25	260	1.9	150	1.92	156	1.85	138	1.7	105	1.95	164	1.9	150	2.2	242
7,	2.1	209	2.08	203	2.22	249	2.15	226	2.28	270	1.9	150	1.9	150	1.85	138	1.7	105	1.85	138	1.8	126	1.9	150
8,	2.1	209	1.92	155	2.32	285	3.7	1060	2.22	249	1.9	150	1.9	150	1.85	138	1.7	105	1.75	116	1.75	116	1.85	138
9,	2.02	184	2.5	355	2.25	260	3.65	1025	2.18	235	1.9	150	1.82	131	1.95	164	1.7	105	1.7	105	1.75	116	1.8	126
10,	2.02	184	2.35	296	2.1	209	2.72	455	2.18	235	2.35	296	1.82	131	1.9	150	1.7	105	1.7	105	1.75	116	1.8	126
11,	2.15	226	1.98	173	2.15	226	2.65	422	2.12	216	2.55	378	1.8	126	1.9	150	1.7	105	1.7	105	1.75	116	2.2	242
12,	2.32	285	2.08	203	2.12	216	2.45	335	2.1	209	1.98	172	1.82	131	1.8	126	1.7	105	1.7	105	1.75	116	1.9	150
13,	2.25	260	2.32	285	2.0	178	2.45	335	2.05	194	1.9	150	1.82	131	1.8	126	1.7	105	1.7	105	1.75	116	1.8	126
14,	2.25	260	2.15	226	2.15	226	2.45	335	2.05	194	1.9	150	1.8	126	1.85	138	1.7	105	1.7	105	1.75	116	1.75	116
15,	2.15	226	2.55	378	2.4	315	5.0	2180	2.05	194	1.9	150	1.82	131	1.8	126	1.7	105	1.7	105	1.75	116	1.8	126
16,	3.3	790	2.15	226	2.22	249	2.8	495	2.05	194	2.2	242	1.8	126	1.8	126	1.68	101	1.65	96	1.75	116	1.85	138
17,	2.18	235	2.02	184	2.2	242	2.75	470	2.0	178	1.95	164	2.3	277	1.72	109	1.65	96	1.65	96	1.75	116	3.2	725
18,	2.12	216	2.22	249	2.1	209	2.55	378	2.0	178	2.9	550	1.95	164	1.75	116	1.6	87	1.65	96	1.7	105	2.45	335
19,	2.1	209	2.08	203	2.12	216	2.45	335	2.0	178	2.2	242	1.85	138	1.75	116	1.6	87	1.82	131	2.6	400	1.9	150
20,	1.95	164	2.08	203	2.25	260	2.45	335	2.0	178	2.02	184	2.3	277	1.8	126	1.6	87	3.25	758	1.88	145	3.3	790
21,	2.05	194	2.22	249	2.15	226	2.4	315	2.0	178	1.95	164	2.78	485	4.35	1580	1.7	105	2.58	391	1.8	126	2.58	391
22,	2.05	194	2.32	285	2.18	235	2.4	315	2.0	178	3.2	725	2.75	470	1.95	164	1.68	101	2.2	242	1.75	116	2.35	296
23,	2.08	203	2.12	216	2.18	235	2.4	315	2.0	178	2.18	235	2.72	455	1.8	126	1.65	96	1.9	150	1.75	116	2.1	209
24,	2.28	270	2.12	216	2.1	209	2.35	296	2.0	178	2.3	277	2.2	242	1.78	122	1.6	87	1.9	150	1.72	109	2.0	178
25,	2.92	561	2.22	249	2.12	216	2.3	277	2.0	178	1.92	156	1.9	150	1.9	150	1.6	87	1.9	150	1.7	105	2.12	216
26,	2.0	178	2.2	242	2.2	242	2.3	277	2.0	178	1.9	150	2.0	178	1.9	150	1.6	87	1.95	164	1.7	105	2.05	194
27,	2.0	178	2.15	226	2.92	561	2.3	277	2.0	178	1.9	150	2.0	178	2.0	178	1.6	87	1.95	164	1.7	105	2.0	178
28,	2.35	296	1.88	145	2.82	506	2.3	277	2.3	277	1.9	150	3.2	725	1.9	150	1.6	87	1.95	164	1.7	105	2.0	178
29,	2.12	216	-----	-----	2.5	355	2.28	270	2.3	277	1.88	145	3.45	888	1.9	150	1.6	87	1.9	150	1.7	105	2.0	178
30,	2.95	578	-----	-----	2.52	364	2.25	260	2.1	209	1.8	126	2.4	315	1.95	164	1.6	87	1.9	150	1.7	105	1.9	150
31,	2.05	194	-----	-----	2.52	364	-----	-----	2.0	178	-----	-----	1.9	150	1.85	138	-----	-----	1.9	150	-----	-----	3.8	1140

Note:—There was considerable slush ice February 3-16, but the figures obtained from the rating table are probably not more than ten per cent. larger than the true values.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DEER CREEK, AT CHURCHVILLE, MARYLAND.

1907.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.55	378	2.05	......	2.00	178	2.05	194	1.95	164	1.90	150	1.95	164	2.25	260	1.65	96	2.15	226	1.90	150	2.25	260
2,	2.22	249	2.15	......	3.82	1150	2.00	178	1.95	164	3.25	758	1.90	150	1.95	164	1.70	105	2.05	194	1.92	156	2.10	209
3,	2.12	216	2.25	......	2.85	522	2.00	178	1.95	164	2.25	260	1.85	138	1.95	164	1.65	96	2.00	178	3.10	665	2.20	242
4,	2.52	364	2.05	......	2.25	260	2.00	178	2.00	178	2.00	178	1.80	126	1.98	172	1.65	96	2.00	178	2.08	203	2.15	226
5,	2.18	235	1.80	......	2.20	242	2.00	178	2.00	178	2.40	315	1.80	126	1.78	122	1.70	105	2.35	296	2.00	178	2.20	242
6,	2.10	209	2.45	......	2.30	277	2.00	178	2.00	178	2.20	242	1.80	126	1.82	131	1.70	105	2.02	184	2.00	178	2.15	226
7,	2.08	202	2.40	......	2.10	209	2.00	178	2.10	209	1.95	164	2.05	194	1.75	116	1.60	87	1.95	164	3.90	1210	2.20	242
8,	2.05	194	2.35	......	2.10	209	2.35	296	1.95	164	2.10	209	1.88	145	1.70	105	1.70	105	2.28	270	2.42	323	2.05	194
9,	2.25	260	2.40	......	2.40	315	2.52	364	2.15	226	2.05	194	1.85	138	3.08	653	1.70	105	2.02	184	2.30	277	3.95	1250
10,	2.20	242	2.25	......	2.10	209	2.30	277	2.00	178	2.00	178	1.80	126	2.05	194	1.70	105	1.95	164	2.20	242	3.65	1025
11,	2.05	194	2.20	......	2.20	242	2.20	242	2.05	194	2.02	184	1.90	150	1.90	150	1.68	101	1.95	164	2.40	315	2.65	422
12,	2.28	270	2.30	......	2.20	242	2.08	203	2.00	178	2.08	203	2.15	226	1.80	126	1.98	172	1.90	150	2.15	226	2.30	277
13,	2.35	296	2.35	......	4.05	1330	2.02	184	1.95	164	1.98	172	1.85	138	1.70	105	1.75	116	1.90	150	2.12	216	1.85	138
14,	2.45	335	2.25	......	3.95	1250	2.00	178	1.92	156	2.15	226	1.80	126	1.70	105	1.70	105	1.90	150	2.00	178	3.02	617
15,	2.35	296	2.30	......	2.85	522	2.00	178	1.88	145	2.00	178	1.75	116	1.70	105	1.65	96	1.90	150	2.00	178	2.97	588
16,	2.25	260	2.20	......	2.55	378	2.00	178	2.02	184	1.95	164	1.75	116	1.70	105	1.65	96	1.85	138	2.00	178	2.75	470
17,	2.30	277	2.15	......	2.50	355	2.02	184	1.98	172	1.90	150	1.90	150	1.70	105	1.65	96	1.85	138	2.00	178	2.63	414
18,	2.20	242	2.10	......	2.50	355	1.98	172	1.95	164	1.90	150	2.42	323	1.75	116	2.35	296	1.85	138	2.05	194	2.50	355
19,	2.20	242	2.25	......	3.10	665	1.95	164	2.70	445	1.90	150	2.25	260	1.70	105	1.75	116	1.85	138	2.32	285	2.50	355
20,	3.00	605	2.25	......	2.85	522	1.95	164	1.98	172	1.90	150	1.85	138	1.70	105	1.90	150	1.85	138	2.50	355	2.30	277
21,	2.35	296	2.05	......	2.45	335	1.95	164	1.95	164	1.95	164	1.80	126	1.70	105	1.70	105	1.85	138	2.25	260	2.30	277
22,	2.20	242	2.10	......	2.40	315	1.95	164	1.95	164	1.90	150	1.75	116	1.88	145	1.65	96	1.85	138	2.15	226	2.25	260
23,	2.10	209	2.10	......	2.30	277	2.12	216	1.88	145	1.85	138	1.70	105	1.70	105	5.45	2650	1.85	138	2.15	226	4.27	1510
24,	2.15	142	2.10	......	2.25	260	2.70	445	2.00	178	1.85	138	1.70	105	2.80	495	2.72	455	1.85	138	4.40	1620	2.75	470
25,	2.10	142	2.25	......	2.20	242	2.10	209	1.92	156	1.82	131	1.70	105	1.90	150	2.52	364	1.85	138	3.80	1135	2.75	470
26,	2.20	142	2.25	......	2.20	242	2.00	178	2.05	194	1.80	126	1.70	105	1.75	116	2.02	184	1.85	138	3.10	665	2.50	355
27,	2.00	142	2.00	......	2.20	242	2.00	178	2.20	242	1.80	126	1.70	105	1.70	105	1.95	164	1.80	126	2.50	355	2.45	335
28,	2.15	142	2.15	......	2.20	242	2.00	178	2.00	178	1.88	145	1.70	105	1.70	105	1.92	158	1.90	150	2.30	277	2.40	315
29,	2.05	142	......	......	2.15	226	2.00	178	2.00	178	2.05	194	1.70	105	1.70	105	4.00	1290	2.12	216	2.30	277	2.55	378
30,	2.08	142	......	......	2.10	209	2.00	178	1.92	156	2.40	315	1.80	126	1.70	105	2.45	335	2.00	178	2.20	242	2.42	323
31,	2.00	142	......	......	2.05	194	......	......	1.90	150	......	......	1.72	109	1.70	105	......	......	1.90	150	......	......	2.40	315

Note:—Ice conditions prevailed from about January 24 to February 28, 1907. Discharge estimated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DEER CREEK, AT CHURCHVILLE, MARYLAND.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.35	296	3.83	1158	2.50	355	2.55	378	2.10	209	2.10	209	1.70	105	1.60	87	1.65	96	1.72	109	1.88	145	1.72	109
2,	2.37	304	2.52	364	2.60	400	2.42	323	2.00	178	2.08	203	1.68	101	1.60	87	1.65	96	1.65	96	1.82	131	1.70	105
3,	2.32	285	2.50	355	2.52	364	2.35	296	2.15	226	2.05	194	1.85	138	1.60	87	1.65	96	1.60	87	1.78	122	1.70	105
4,	2.30	277	2.32	284	2.55	378	2.25	260	2.05	194	2.00	178	1.78	122	1.60	87	1.65	96	1.60	87	1.72	109	1.70	105
5,	2.25	260	2.33	288	2.45	335	2.25	260	2.15	226	1.95	164	1.72	109	2.08	203	1.65	96	1.60	87	1.78	122	1.70	105
6,	2.25	260	5.35	312	2.55	378	2.20	242	2.30	277	1.90	150	1.75	116	1.80	126	2.00	178	1.60	87	1.75	116	1.72	109
7,	2.65	422	5.35	312	2.55	378	2.25	260	5.30	2480	1.90	150	1.75	116	2.00	178	1.72	109	1.60	87	1.70	105	2.32	285
8,	2.97	588	4.15	312	3.07	647	2.25	260	2.90	550	1.90	150	1.95	164	1.98	172	1.65	96	1.60	87	1.70	105	2.00	178
9,	2.50	355	4.20	312	3.30	790	2.27	255	2.75	470	1.90	150	1.70	105	1.78	122	1.65	96	1.60	87	1.70	105	1.80	126
10,	2.53	368	4.40	312	2.95	578	2.42	323	2.35	296	1.85	138	1.70	105	1.70	105	1.65	96	1.60	87	1.65	96	1.82	131
11,	2.38	307	4.45	312	2.52	364	2.30	277	2.20	242	1.85	138	1.65	96	1.70	105	1.65	96	1.65	96	1.65	96	1.75	116
12,	4.30	1535	4.42	312	2.55	378	2.25	260	2.10	209	1.85	138	1.60	87	1.65	96	1.65	96	1.60	87	1.65	96	2.12	216
13,	2.95	574	4.07	312	2.50	355	2.17	232	2.07	200	1.85	138	1.60	87	1.60	87	1.65	96	1.60	87	1.60	87	1.92	156
14,	3.10	665	2.90	550	2.55	378	2.18	235	1.95	164	1.80	126	1.70	105	1.60	87	1.60	87	1.60	87	1.60	87	1.80	126
15,	2.52	364	4.23	1475	2.45	335	2.37	304	2.10	209	1.82	131	1.75	116	1.65	96	1.60	87	1.60	87	1.60	87	1.80	126
16,	2.53	368	2.75	470	2.50	355	2.25	260	2.18	235	2.28	270	1.68	101	1.60	87	1.60	87	1.60	87	1.60	87	1.75	116
17,	2.45	335	2.60	400	2.45	335	2.17	232	2.20	242	1.88	145	1.60	87	1.72	109	1.60	87	1.55	80	1.75	116	1.80	126
18,	2.47	343	2.45	335	2.47	343	2.10	209	2.18	235	1.80	126	1.60	87	2.30	277	1.60	87	1.55	80	1.80	126	2.08	203
19,	2.40	315	2.45	335	2.40	315	2.35	296	2.80	495	1.80	126	1.58	84	1.75	116	1.60	87	1.55	80	1.95	164	2.00	178
20,	2.45	335	2.80	495	2.45	335	2.18	235	2.45	335	1.80	126	1.55	80	1.68	101	1.60	87	1.55	80	2.05	194	1.88	145
21,	2.40	315	2.53	368	2.40	315	2.15	226	3.25	758	1.80	126	1.55	80	1.62	91	1.60	87	1.55	80	1.92	156	1.80	126
22,	2.45	335	2.42	323	2.45	335	2.10	209	2.90	550	1.80	126	2.9	550	1.55	80	1.60	87	1.55	80	1.85	138	1.80	126
23,	2.35	296	2.40	315	2.30	277	2.15	226	2.40	315	1.80	126	2.1	209	1.55	80	1.60	87	1.55	80	1.80	126	1.80	126
24,	2.35	296	2.35	296	2.35	296	2.10	209	2.28	270	1.88	145	1.78	122	1.55	80	1.60	87	1.55	80	1.80	126	1.80	126
25,	2.30	277	2.35	296	2.30	277	2.15	226	2.10	209	1.80	126	6.80	4220	1.60	87	1.60	87	1.95	164	1.80	126	1.92	156
26,	2.33	288	10.50	8460	2.45	335	2.05	194	2.30	277	1.80	126	2.90	550	5.02	2200	1.60	87	5.30	2480	1.78	122	1.85	138
27,	2.55	378	3.15	695	2.50	355	2.10	209	2.10	209	1.70	105	2.05	194	2.55	378	1.60	87	2.50	355	1.78	122	1.85	138
28,	2.40	315	2.95	578	2.40	315	2.00	178	2.10	209	1.70	105	1.88	145	1.80	126	1.60	87	2.12	216	1.78	122	1.80	126
29,	2.35	296	2.75	470	2.55	378	2.05	194	2.10	209	1.70	105	1.75	116	1.70	105	2.80	495	2.10	209	1.75	116	1.90	150
30,	2.25	260			2.55	378	2.05	194	2.18	235	1.70	105	1.7	105	1.70	105	1.90	150	2.30	277	1.72	109	1.90	150
31,	2.20	242			2.60	400			2.12	216			1.62	91	1.70	105			1.95	164			2.00	178

Note:—Ice conditions prevailed from about February 6 to 13, 1908. Discharge estimated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF DEER CREEK, AT CHURCHVILLE, MARYLAND.

1909.	JAN.		FEB.		MAR.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.
1	1.90	150	1.80	126	2.15	226
2	1.85	138	2.00	178	2.45	335
3	1.90	150	2.00	178	2.35	296
4	1.80	126	1.90	150	2.70	445
5	2.38	307	1.95	164	2.00	178
6	2.92	561	1.90	150	2.05	194
7	2.18	235	1.90	150	2.20	242
8	2.00	178	1.90	150	2.68	436
9	2.00	178	1.98	172	2.88	539
10	1.95	164	3.28	777	2.88	539
11	1.95	164	2.45	335	2.60	400
12	1.95	164	2.20	242	2.58	391
13	1.90	150	2.20	242	2.60	400
14	1.92	156	2.10	209	2.65	422
15	2.00	178	2.10	209	2.50	350
16	2.12	216	2.18	235	2.40	315
17	1.90	150	2.32	285	2.40	315
18	1.98	172	2.10	209	2.38	307
19	2.00	178	2.05	194	2.32	285
20	2.12	216	2.68	436	2.38	307
21	2.05	194	2.30	277	2.30	277
22	1.90	150	2.25	260	2.20	242
23	2.05	194	2.15	226	2.20	242
24	2.35	296	3.38	842	2.25	260
25	2.45	335	2.85	522	3.00	605
26	2.35	296	2.45	335	2.40	315
27	2.10	209	2.40	315	2.65	422
28	2.10	209	2.35	296	2.50	355
29	2.00	178	------	------	2.40	315
30	2.10	209	------	------	2.32	285
31	1.88	145	------	------	2.22	249

Note:—No ice notes. Probable ice conditions during parts of January and February. The daily discharges are based on a rating curve that is well defined between 72 and 920 second-feet. These may be in excess for some days in January and February because of probable ice conditions.

ESTIMATED MONTHLY DISCHARGE OF DEER CREEK, AT CHURCHVILLE, MARYLAND.

(Drainage area, 141 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
*1904.					
December 14-31,	522	....	130	.922	.62
†1905.					
January,	3200	....	264	1.87	2.16
February,	635	....	162	1.15	1.20
March,	955	164	377	2.67	3.08
April,	635	178	254	1.80	2.01
May,	296	105	153	1.09	1.26
June,	335	96	144	1.02	1.14
July,	[illegible]	96	162	1.15	1.33
August,	2680	96	249	1.77	2.04
September,	920	105	194	1.38	1.54
October,	822	105	168	1.19	1.37
November,	323	105	130	.922	1.03
December,	2230	115	265	1.88	2.17
The year,	3200	....	210	1.49	20.33
‡1906.					
January,	790	150	273	1.94	2.24
February,	377	126	219	1.55	1.61
March,	855	178	301	2.13	2.46
April,	2180	225	426	3.02	3.37
May,	277	178	211	1.50	1.73
June,	725	126	212	1.50	1.67
July,	887	115	251	1.78	2.05
August,	1580	109	187	1.33	1.53
September,	126	87	992	.704	.79
October,	758	87	165	1.17	1.35
November,	400	105	132	.936	1.04
December,	1140	105	243	1.72	1.98
The year,	2180	87	227	1.60	21.82

*The flow during the frozen period of 1904 to 1905 was determined by intercomparison of flow at eastern Maryland stations.

Values are rated as follows: December 1904, approximate, owing to ice conditions December 14 to 27.

†The flow during the frozen period of 1904 and 1905 was determined by intercomparison of flow at eastern Maryland stations.

Values are rated as follows:—January and February, fair, owing to ice conditions January 27 to February 22; March 1905 to December 1906 excellent. Daily discharge above 2,000 second-feet, fair.

‡Discharge computations were not corrected for ice conditions.

Values are rated as follows:—March 1905 to December 1906, excellent; daily discharge above 2,000 second-feet, fair.

ESTIMATED MONTHLY DISCHARGE OF DEER CREEK, AT CHURCHVILLE, MARYLAND.

(Drainage area, 141 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
§1907.					
January,	605		240	1.70	1.96
February,			180	1.28	1.33
March,	1330	178	394	2.79	3.22
April,	445	164	204	1.45	1.62
May,	445	145	183	1.30	1.50
June,	758	126	200	1.42	1.58
July,	323	105	142	1.01	1.16
August,	653	105	156	1.11	1.28
September,	2650	87	272	1.93	2.15
October,	296	126	166	1.18	1.36
November,	1620	150	372	2.64	2.94
December,	1510	138	420	2.98	3.44
The year,	2650	87	244	1.73	23.54
*1908.					
January,	1540	242	383	2.72	3.14
February,	8460		718	5.08	5.48
March,	790	277	379	2.69	3.10
April,	378	178	249	1.77	1.98
May,	2480	164	359	2.55	2.94
June,	270	105	145	1.03	1.15
July,	4220	80	274	1.94	2.24
August,	2200	80	189	1.34	1.54
September,	495	87	110	.780	.87
October,	2480	80	192	1.36	1.57
November,	194	87	119	.844	.94
December,	285	105	142	1.01	1.16
The year,	8460	80	272	1.93	26.11
1909.					
January,	561	126	205	1.45	1.67
February,	842	126	281	1.99	2.07
March,	605	178	339	2.40	2.77

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§Discharge during the frozen period of 1907 estimated on the basis of climatological reports and intercomparison of data on stream flow collected at Eastern Maryland stations: Discharge January 24 to 31, 1907—142 second-feet.

*Discharge during the frozen period of 1908 estimated on the basis of climatological reports and intercomparison of data on stream flow collected at Eastern Maryland stations; discharge February 6 to 13, 1908—312 second-feet.

POTOMAC BASIN.

WEST BRANCH OF LITTLE ANTIETAM CREEK.

DESCRIPTION OF BASIN.

The West Branch of Little Antietam Creek rises in many springs and mountain streams in Quincy township, Franklin county, and flows in a general southerly direction to its junction with the East Branch, about one-half mile below the state line in Maryland. Its drainage area in Pennsylvania is 44 square miles, while its total length is approximately 12 miles. Its course is through an agricultural region, the hills bordering the valley being heavily timbered. There are but few tributaries; those entering from the west draining a limestone area. In its watershed are many small towns and villages, the largest of which is Waynesboro, which receives part of its domestic water supply from the creek.

The mean annual precipitation over this watershed is from 35 to 40 inches.

The discharge of this stream has been measured over a concrete weir since May 1st, 1909, at Mont Alto, by the Pennsylvania State Forestry Academy, about two miles below its source.

POTOMAC BASIN—STATION NO. 1.

WEST BRANCH OF LITTLE ANTIETAM CREEK AT MONT ALTO.

DESCRIPTION OF STATION.

This station was established by the Pennsylvania State Forestry Academy on May 1st, 1909, and consists of a concrete weir located about one mile above the Academy buildings, on State land. This weir is of the sharp crested type with end contractions, being 5.98 feet wide across the crest at the bottom and 6.05 feet wide at the top. The sides are 1.64 feet high and the crest is not level, the west end being .01 of a foot lower than the right. The hook gage is placed about three feet upstream from the right end and is read to thousandths. Floods overflow the weir but once or twice yearly, the ordinary high water being about 1.5 feet over the crest. To all appearances there is no leakage through the concrete or under it.

The weir is read on an average of twice daily by the Forestry Academy students, except during vacation periods.

Water is pumped from the stream above the weir by the system which supplies the State Health Department, Mont Alto Sanitarium, and is, also, lead, by a 6 inch pipe, from a point a short distance above the weir to the Academy buildings. No records are obtainable of the amount thus used by the latter supply, but the supply pumped to the Sanitarium averaged 37,000 gallons daily during the year 1911, or at the rate of .057 cubic feet per second.

DISCHARGE TABLE FOR WEST BRANCH LITTLE ANTIETAM CREEK, AT MONT ALTO, FRANKLIN COUNTY, FROM MAY 1, 1909.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.00	0.00	0.31	3.39	0.62	9.53	0.93	17.38	1.22	25.92
0.01	0.05	0.32	3.56	0.63	9.77	0.94	17.65	1.23	26.23
0.02	0.10	0.33	3.73	0.64	10.01	0.95	17.93	1.24	26.54
0.03	0.15	0.34	3.90	0.65	10.25	0.96	18.21	1.25	26.85
0.04	0.20	0.35	4.07	0.66	10.49	0.97	18.49	1.26	27.16
0.05	0.26	0.36	4.24	0.67	10.73	0.98	18.77	1.27	27.47
0.06	0.32	0.37	4.42	0.68	10.97	0.99	19.05	1.28	27.78
0.07	0.39	0.38	4.60	0.69	11.21	1.00	19.33	1.29	28.09
0.08	0.46	0.39	4.78	0.70	11.45	1.01	19.62	1.30	28.41
0.09	0.54	0.40	4.96	0.71	11.69	1.02	19.91	1.31	28.73
0.10	0.63	0.41	5.14	0.72	11.94	1.03	20.20	1.32	29.05
0.11	0.72	0.42	5.33	0.73	12.19	1.04	20.49	1.33	29.38
0.12	0.82	0.43	5.52	0.74	12.44	1.05	20.78	1.34	29.71
0.13	0.92	0.44	5.71	0.75	12.69	1.06	21.07	1.35	30.04
0.14	1.03	0.45	5.90	0.76	12.94	1.07	21.36	1.36	30.37
0.15	1.15	0.46	6.10	0.77	13.19	1.08	21.65	1.37	30.70
0.16	1.27	0.47	6.30	0.78	13.44	1.09	21.94	1.38	31.03
0.17	1.39	0.48	6.50	0.79	13.69	1.10	22.23	1.39	31.36
0.18	1.51	0.49	6.70	0.80	13.94	1.11	22.53	1.40	31.70
0.19	1.63	0.50	6.91	0.81	14.20	1.12	22.83	1.41	32.04
0.20	1.76	0.51	7.12	0.82	14.46	1.13	23.13	1.42	32.38
0.21	1.89	0.52	7.33	0.83	14.72	1.14	23.44	1.43	32.72
0.22	2.02	0.53	7.54	0.84	14.98	1.15	23.75	1.44	33.06
0.23	2.16	0.54	7.75	0.85	15.24	1.16	24.06	1.45	33.40
0.24	2.30	0.55	7.96	0.86	15.50	1.17	24.37	1.46	33.75
0.25	2.44	0.56	8.18	0.87	15.76	1.18	24.68	1.47	34.10
0.26	2.59	0.57	8.40	0.88	16.03	1.19	24.99	1.48	34.45
0.27	2.75	0.58	8.62	0.89	16.30	1.20	25.30	1.49	34.80
0.28	2.91	0.59	8.84	0.90	16.57	1.21	25.61	1.50	35.15
0.29	3.07	0.60	9.06	0.91	16.84				
0.30	3.23	0.61	9.29	0.92	17.11				

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BR. LITTLE ANTIETAM CREEK, AT MONT ALTO, FRANKLIN COUNTY, PENNA.

1909.	MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	.565	8.29	.290	3.07	.225	2.09	.105	.68	.120	.82	.128	.90	.138	1.01	.135	.98
2,	.535	7.65	.290	3.07	.215	1.96	.135	.98	.115	.77	.132	.94	.138	1.01	.152	.94
3,	.480	6.50	.295	3.15	.205	1.82	.125	.87	.130	.92	.132	.94	.135	.98	.132	.94
4,	.460	6.10	.380	4.60	.190	1.63	.120	.82	.128	.90	.130	.92	.132	.94	.134	.96
5,	.440	5.71	.775	13.32	.220	2.02	.115	.77	.140	1.03	.132	.94	.135	.98	.134	.96
6,	.430	5.52	.450	5.90	.155	1.21	.135	.98	.125	.87	.126	.88	138	1.01	.132	.94
7,	.440	5.71	.445	5.80	.180	1.51	.125	.87	.130	.92	.132	.94	.132	.94	.156	1.22
8,	.430	5.52	.500	6.91	.195	1.70	.115	.77	*.130	.92	.132	.94	.138	1.01	.145	1.09
9,	*.425	5.42	.485	6.60	.160	1.27	.135	.98	.132	.94	.129	.91	.142	1.05	.142	1.05
10,	.420	5.33	.520	7.33	.150	1.15	-----	-----	.188	1.61	.125	.87	.138	1.01	.135	.98
11,	.410	5.14	.500	6.91	.155	1.21	-----	-----	.135	.98	.182	1.53	.138	1.01	.132	.94
12,	.405	5.05	.475	6.40	.145	1.09	-----	-----	.145	1.09	.158	1.25	.138	1.01	.129	.91
13,	.365	4.33	.455	6.00	.155	1.21	-----	-----	.141	1.04	.140	1.03	.132	.94	.362	4.28
	.310	3.39	.440	5.71	.160	1.27	-----	-----	.138	1.01	.140	1.03	.132	.94	.362	4.28
15,	.360	4.24	.415	5.24	.155	1.21	-----	-----	.148	1.13	.140	1.03	.132	.94	.158	1.25
16,	.350	4.07	.400	4.96	.140	1.03	-----	-----	.165	1.33	.142	1.05	.132	.94	-----	-----
17,	.340	3.90	.510	7.12	.170	1.39	-----	-----	.168	1.37	.128	.90	.135	.98	-----	-----
18,	.330	3.73	.415	5.24	.155	1.21	-----	-----	.162	1.29	.140	1.03	.132	.94	-----	-----
19,	.310	3.39	.355	4.15	.160	1.27	-----	-----	.142	1.05	.140	1.03	.130	.92	-----	-----
20,	.315	3.48	.330	3.73	.140	1.03	-----	-----	.132	.94	.140	1.03	.130	.92	-----	-----
21,	*.320	3.56	.287	3.02	.125	.87	-----	-----	.140	1.03	.145	1.09	.130	.92	-----	-----
22,	*.320	3.56	.370	4.42	.130	.92	-----	-----	.138	1.01	.140	1.03	.132	.94	-----	-----
23,	.340	3.90	.305	3.31	.165	1.33	-----	-----	.135	.98	.228	2.13	.142	1.05	-----	-----
24,	.335	4.15	.270	2.75	.155	1.21	-----	-----	.135	.98	.152	1.17	.138	1.01	-----	-----
25,	.345	3.98	.240	2.30	.150	1.15	-----	-----	.148	1.13	.132	.94	.138	1.01	-----	-----
26,	.300	3.23	.250	2.44	.110	.72	-----	-----	.140	1.03	.132	.94	.132	.94	-----	-----
27,	.340	3.90	.260	2.59	.110	.72	-----	-----	.138	1.01	.138	1.01	.132	.94	-----	-----
28,	.340	3.90	.275	2.83	.110	.72	-----	-----	.142	1.05	.132	.94	.136	.94	-----	-----
29,	.350	4.07	.265	2.67	.110	.72	-----	-----	.138	1.01	.132	.94	.132	.94	-----	-----
30,	.290	3.07	.220	2.16	.100	.63	-----	-----	.132	.94	.135	.98	.132	.94	-----	-----
31,	.285	2.99	-----	-----	.090	.54	-----	-----	-----	-----	.138	1.01	-----	-----	-----	-----

Note.—August 10-31; December 16-31, no readings. Vacation.
***Estimated.**

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BR. LITTLE ANTIETAM CREEK, AT MONT ALTO, FRANKLIN COUNTY, PENNA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,			.170	1.39	.705	11.57	.220	2.02	.620	5.93	.285	2.99	.348	4.04	.172	1.41	.220	2.02	.120	.82	.115	.77	.132	.94
2,			.170	1.39	.598	9.02	.220	2.02	.550	7.96	.275	2.93	.342	3.93	.168	1.37	.165	1.33	.120	.82	.130	.92	.115	.77
3			.168	1.37	.560	8.18	.218	1.99	.510	7.12	.480	6.50	.340	3.90	.162	1.29	.200	1.76	.125	.87	.125	.87	.105	.68
4,	.138	1.01	.160	1.27	*.550	7.96	.218	1.99	.472	6.34	.382	4.64	.322	3.59	.188	1.61	.165	1.33	.115	.77	.130	.92	.095	.58
5	.138	1.01	.160	1.27	*.540	7.75	.218	1.99	.458	6.06	.398	4.92	.298	3.20	.182	1.53	.158	1.25	.130	.92	.138	1.01	.095	.58
6,	.230	2.16	.152	1.17	*.530	7.54	.220	2.02	.440	5.71	.408	5.10	.292	3.10	.178	1.49	.148	1.13	.120	.82	.130	.92	.120	.82
7,	.165	1.33	.158	1.25	.518	7.29	.205	1.82	.422	5.37	.390	4.78	.290	3.07	.172	1.41	.140	1.03	.135	.98	.115	.77	.125	.87
8,	.145	1.09	.172	1.41	.488	6.66	.202	1.79	.410	5.14	.365	4.33	.285	2.99	.200	1.76	.140	1.03	.132	.94	.090	.54	.120	.82
9,	.138	1.01	.180	1.51	.450	5.90	*.200	1.76	.415	5.24	.365	4.33	.272	2.78	.188	1.61	.142	1.05	.135	.98	.112	.74	.110	.72
10,	.135	.98	.172	1.41	.420	5.33	.200	1.76	.382	4.64	.455	6.00	.272	2.78	.176	1.46	.138	1.01	.118	.80	.095	.58	.112	.74
11,	.132	.94	.172	1.41	.410	5.14	.202	1.79	.382	4.64	.705	11.57	.265	2.67	*.162	1.29	.140	1.03	*.118	.80	.120	.82	.115	.77
12,	.132	.94	.168	1.37	.398	4.92	.200	1.76	.388	4.74	.765	13.06	.323	3.61	.150	1.15	.142	1.05	.120	.82	.120	.82	.102	.65
13,	.138	1.01	.168	1.37	.382	4.64	.192	1.66	.365	4.33	.575	8.51	.280	2.91	.142	1.05	.155	1.21	.130	.92	.125	.87	.078	.45
14,	.138	1.01	.162	1.29	.368	4.38	.192	1.66	.338	3.87	.550	7.96	.248	2.41	*.170	1.39	.160	1.27	.125	.87	.115	.77	.090	.54
15,	.135	.98	.162	1.29	.345	3.98	.190	1.63	.332	3.76	.525	7.44	.235	2.31	.200	1.76	.145	1.09	.120	.82	.128	.90	.088	.52
16,	.138	1.01	.395	4.87	.335	3.82	.190	1.63	.312	3.42	1.440	33.06	.232	2.19	.158	1.25	.135	.98	.120	.82	.115	.77	.104	.67
17,	.142	1.05	.256	2.53	.320	3.56	.208	1.86	.300	3.23	1.565	37.40	*.230	2.16	.158	1.25	.138	1.01	.124	.86	.112	.74	.115	.77
18,	.210	1.89	.410	5.14	.305	3.31	.350	4.07	.298	3.20	1.375	30.86	.230	2.16	.152	1.17	.138	1.01	.112	.74	.095	.58	.100	.63
19,	.220	2.02	.260	2.59	.292	3.10	.445	5.80	.292	3.10	1.040	20.49	.250	2.44	.245	2.37	.142	1.05	.110	.72	.115	.77	*.100	.63
20,	.180	1.51	.335	3.82	.288	3.04	.438	5.67	.302	3.26	.855	15.37	.230	2.16	.172	1.41	.145	1.09	.102	.65	.118	.80	.105	.68
21,	.852	15.29	.545	7.86	.282	2.94	.405	5.05	.315	3.48	.695	11.33	.205	1.82	.170	1.39	.135	.98	.125	.87	.122	.84	.115	.77
22,	.785	13.56	.718	11.89	.265	2.67	.420	5.33	.320	3.56	.605	9.18	.190	1.63	.165	1.33	.132	.94	.178	1.49	.132	.94	.115	.77
23,	.530	7.54	.730	12.19	.255	2.52	.445	5.80	.295	3.15	.565	8.29	.175	1.45	.158	1.25	.135	.98	.122	.84	.112	.74	.115	.77
24,	.475	6.40	.650	10.25	.260	2.59	1.065	21.22	.270	2.75	.542	7.79	.165	1.33	.148	1.13	.130	.92	.124	.86	*.120	.82	*.120	.82
25,	.395	4.87	.635	9.89	*.255	2.52	1.242	26.60	.350	4.07	.505	7.02	.175	1.45	.140	1.63	.120	.82	.124	.86	.130	.92	.125	.87
26,	.275	2.83	.515	7.22	*.250	2.44	1.135	23.28	.335	3.82	.462	6.14	.172	1.41	.140	1.03	.132	.94	.125	.87	.115	.74	*.125	.87
27,	.270	2.75	.555	8.07	*.245	2.37	1.010	19.62	.310	3.39	.435	5.62	.155	1.21	.140	1.03	.135	.98	.131	.93	.105	.68	.130	.92
28,	.205	1.82	.740	12.44	.240	2.30	.862	15.55	*.305	3.31	.515	7.22	.148	1.13	.138	1.01	.138	1.01	.130	.92	.145	1.09	.136	.99
29,	.190	1.63			.235	2.23	.750	12.69	*.300	3.23	.390	4.78	.142	1.05	.135	.98	.132	.94	.120	.82	.145	1.09	.138	1.01
30,	.185	1.57			.230	2.16	.688	11.16	*.295	3.15	.372	4.46	.190	1.63	.130	.92	.128	.90	.122	.84	.134	.96	.130	.92
31,	.175	1.45			.230	2.16			.290	3.07			.172	1.41	.130	.92			.112	.74			.125	.87

*Estimated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST BR. LITTLE ANTIETAM CREEK, AT MONT ALTO, FRANKLIN COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	.295	3.15	.238	2.27	.345	3.98	.455	6.00	.180	1.51	.210	1.89	.115	.77	------	------	.152	1.17	.160	1.27	.272	2.78
2,	------	------	.285	2.99	.275	2.83	.325	3.64	.525	7.44	.180	1.51	.210	1.89	.130	.92	------	------	.165	1.33	.185	1.57	.278	2.88
3,	.420	5.33	.255	2.67	.260	2.59	.315	3.48	.465	6.20	.235	2.23	.195	1.70	.132	.94	------	------	.142	1.05	.182	1.53	.275	2.83
4,	.230	2.16	.275	2.83	.260	2.59	.465	6.20	.430	5.52	.190	1.63	.190	1.63	.160	1.27	------	------	.148	1.12	.188	1.61	.268	2.72
5,	.170	1.39	.260	2.50	.245	2.37	.590	8.84	.405	5.05	.400	4.96	.185	1.57	.148	1.13	------	------	.138	1.01	.165	1.33	.272	2.78
6,	.239	2.10	.275	2.83	.260	2.59	.465	6.20	.385	4.69	.210	1.89	.175	1.45	.145	1.09	------	------	.128	.90	.252	2.47	.265	2.67
7,	.155	1.21	.245	2.37	.220	2.02	.515	7.22	.365	4.33	.185	1.57	.195	1.70	.112	.74	------	------	.128	.90	.192	1.66	.255	2.52
8,	.160	1.27	.200	1.76	.230	2.16	.495	6.80	.355	4.16	.175	1.45	.230	2.16	.135	.98	------	------	.115	.77	.188	1.61	.265	2.67
9,	.160	1.27	.220	2.02	.240	2.30	.525	7.44	.340	3.90	.170	1.39	.190	1.63	.132	.94	------	------	.128	.90	.218	1.99	.255	2.52
10,	.140	1.03	.180	1.51	.330	3.73	.465	6.20	.330	3.73	.170	1.39	.155	1.21	.130	.92	------	------	.125	.87	.238	2.27	.252	2.47
11,	.150	1.15	.200	1.76	.290	3.07	.435	5.62	.330	3.73	.310	3.39	.165	1.33	.110	.72	------	------	.122	.84	.228	2.13	.235	2.23
12,	.160	1.27	.205	1.82	.260	2.59	.415	5.24	.315	3.48	.295	3.15	.180	1.51	.128	.90	------	------	.128	.90	.258	2.56	.240	2.30
13,	.290	3.07	.205	1.82	.290	3.07	.375	4.51	.300	3.23	.215	1.96	.160	1.27	.270	2.75	.125	.87	.115	.77	.265	2.67	.252	2.47
14,	.230	2.16	.230	2.16	.300	3.23	.385	4.69	.275	2.83	.200	1.76	.160	1.27	.105	.68	.140	1.03	.128	.90	.230	2.16	.245	2.37
15,	.170	1.39	.235	2.23	.345	3.98	*.380	4.60	.250	2.44	.190	1.63	.140	1.03	.225	2.09	.415	5.24	.115	.77	.238	2.27	.330	3.73
16,	.165	1.33	.225	2.09	.315	3.48	*.375	4.51	.245	2.37	.180	1.51	.150	1.15	.155	1.21	.200	1.76	.120	.82	.250	2.44	------	------
17,	.160	1.27	.225	2.09	.295	3.15	.375	4.51	.240	2.30	.180	1.51	.135	.98	.155	1.21	.165	1.33	.118	.80	.310	3.39	------	------
18,	.160	1.27	.250	2.44	.305	3.31	.370	4.42	.245	2.37	.400	4.96	.160	1.27	------	------	.145	1.09	.128	.90	.102	.65	------	------
19,	.165	1.33	.260	2.59	.325	3.64	.350	4.07	.240	2.30	.320	3.56	.185	1.57	------	------	.160	1.27	.122	.84	.290	3.07	------	------
20,	.170	1.39	.280	2.91	.350	4.07	.585	8.73	.220	2.02	.295	3.15	.190	1.63	------	------	.158	1.24	*.125	.87	.285	2.99	------	------
21,	.165	1.33	.280	2.91	.320	3.56	.570	8.40	.205	1.82	.280	2.91	.165	1.33	------	------	.210	1.89	*.130	.92	.292	3.10	------	------
22,	.155	1.21	.280	2.91	.300	3.23	*.590	8.84	.185	1.57	.282	2.94	.165	1.33	------	------	.160	1.27	.135	.98	.280	2.91	------	------
23,	.155	1.21	.280	3.91	.305	3.31	*.590	8.84	.195	1.70	.265	2.67	.155	1.21	------	------	.152	1.17	.138	1.01	.285	2.99	------	------
24,	.150	1.15	.285	2.99	.295	3.15	.595	8.95	.235	2.23	.255	2.52	.140	1.03	------	------	.148	1.12	.138	1.01	.320	3.56	------	------
25,	.145	1.09	.295	3.15	.290	3.07	.560	8.18	.230	2.16	.240	2.30	.175	1.45	------	------	.145	1.09	.122	.84	.308	3.36	------	------
26,	.180	1.51	.315	3.48	.295	3.15	.535	7.64	.210	1.89	.235	2.23	.165	1.33	------	------	.140	1.03	.105	.68	.270	2.75	------	------
27,	.310	3.39	.305	3.31	.435	5.62	.495	6.80	.185	1.57	.245	2.37	*.140	1.03	------	------	.145	1.09	.125	.87	.268	2.72	------	------
28,	.260	2.59	.275	2.83	.380	4.00	.475	6.40	.170	1.39	.225	2.09	.118	.80	------	------	.138	1.01	.138	1.01	.322	3.59	------	------
29,	.235	2.23	------	------	.350	4.07	.445	5.80	.165	1.33	.220	2.02	.112	.74	------	------	.210	1.89	.118	.80	.292	3.10	------	------
30,	.460	6.10	------	------	.375	4.51	.450	5.90	.150	1.15	.195	1.70	.125	.87	------	------	.155	1.21	.990	19.05	.260	2.59	------	------
31,	.305	3.31	------	------	.355	4.16	------	------	.165	1.33	------	------	.130	.92	------	------	------	------	.158	1.25	------	------	------	------

*Estimated. January 1-2; August 18; September 12; and December 16-31, no readings. Vacation.

ESTIMATED MONTHLY DISCHARGE OF W. BR. LITTLE ANTIETAM CREEK, AT MONT ALTO, FRANKLIN COUNTY,

(Drainage area 3.5 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a 1909.					
May,	8.29	2.99	4.61	1.32	1.522
June,	13.32	2.16	4.79	1.37	1.529
July,	2.09	.54	1.22	.349	.403
September,	1.61	.77	1.04	.297	.332
October,	2.13	[illegible]	1.04	.297	.342
November,	1.05	.92	.97	.277	.309
1910.					
January, 4-31,	15.29	0.94	2.88	0.823	0.857
February,	12.44	1.17	4.25	1.21	1.260
March,	11.57	2.16	4.64	1.33	1.533
April,	26.60	1.63	6.43	1.84	2.053
May,	9.53	2.75	4.44	1.27	1.464
June,	37.40	2.83	10.13	2.89	3,224
July,	4.04	1.05	2.39	6.83	7.87
August,	2.37	.92	1.32	.377	.435
September,	2.02	.82	1.10	.314	.350
October,	1.49	.65	.86	.246	.284
November,	1.09	.54	.82	[illegible]	.261
December,	1.01	.45	.76	.217	.250
The period,	37.40	.45	3.34	.953	12.758
b 1911.					
January 3-31,	6.10	1.03	1.92	0.549	0.592
February,	3.48	1.51	2.52	.720	.750
March,	5.62	2.02	3.27	.934	1.077
April,	8.95	3.48	6.28	1.79	1.997
May,	7.44	1.15	3.10	.886	1.022
June,	4.96	1.39	2.33	.666	.743
July,	2.16	.74	1.35	[illegible]	.445
October,	19.05	.68	1.51	.431	.497
November,	3.59	.65	2.41	.689	.769

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a August 10-31, and December 16-31, no readings. Vacation.

b January 1-2; August 18-September 12, and December 16-31, no readings. Vacation.

ANTIETAM CREEK.

DESCRIPTION OF BASIN.

Antietam Creek rises in the western part of Maryland, and flows in a southerly direction to its mouth in the Potomac River, ten miles above Harper's Ferry, Md. It flows through a rolling, fertile valley, which is highly cultivated; the bordering hills being heavily timbered and sparsely inhabited. Its principal tributary is Little Antietam Creek, which enters it from the northeast near Antietam, Md., and is formed by the confluence of the East and West Branches. The East Branch rises in the northeastern part of Quincy Township, Franklin County, Penna., and flows in a southwesterly direction to its junction with the West Branch, one-half mile below the state line. The West Branch rises in South Mountain, in the northern part of Quincy Township, Franklin County, Penna., and flows in a general southerly direction to its confluence with the East Branch. The drainage area, to the west of the West Branch, is a limestone region. The drainage area of the East and West Branches are 53 and 44 square miles respectively. The largest town in the watershed, in Pennsylvania, is Waynesboro, which receives part of its domestic water supply from the West Branch of Little Antietam Creek. There are a few small mills operated by water power on its tributaries.

The mean annual precipitation over this watershed is from 35 to 45 inches.

The discharge of this creek was measured near Sharpsburg, Md., from June 24th, 1897, to August 26th, 1905.

POTOMAC BASIN—STATION NO. 2.

ANTIETAM CREEK NEAR SHARPSBURG, MD.

DESCRIPTION OF STATION.

This station was established on June 24th, 1897, by the United States Geological Survey and was discontinued August 26th, 1905. It was located a few hundred feet below the bridge on the toll road from Sharpsburg to Keedysville, Md.

The channel is straight for 300 feet above and below the station. It has a width, at ordinary stages, of about 90 feet and is shallow and unobstructed. There is a good measurable velocity at all stages. The right bank is low and liable to overflow; the left bank is high and rocky; both are fringed with trees. The bed of the stream is composed of gravel, is free from vegetation, and is permanent. There is but one channel at all stages.

Discharge measurements were made from a steel-wire cable, which was supported by the forks of a sycamore tree on each bank and was anchored to timbers set in the ground. The initial point for soundings was a staple in the tree on the left bank.

The gage was a vertical rod driven into the gravel of the stream bed and spiked to a tree on the left bank near the cable. The bench mark was a copper bolt set in a ledge of rock on the left bank at a point about 125 feet above the cable; elevation, 16.34 feet above gage datum. It was read once each day by Charles E. Hammond, toll collector.

The flow is probably affected, to a greater or less extent, by ice conditions.

During the operation of this station 18 discharge measurements were made.

The following data have been furnished by the United States Geological Survey:

DISCHARGE MEASUREMENTS OF ANTIETAM CREEK, AT SHARPSBURG, MARYLAND.

(Drainage area 295 square miles.)

No.	Date.	Hydrographer.	Gage height.	Discharge.	Remarks.
	1897.		Feet.	Sec.-ft.	
1.	June 24,	U. S. G. S.,	2.00	251	
2.	July 2,	do	2.05	240	
3.	Sept. 3,	do	1.60	122	
4.	Oct. 12,	do	1.70	120	Measurement made near mouth of stream.
	1898.				
5.	Jan. 24,	do	2.70	427	
6.	Aug. 19,	do	3.50	831	
	1899.				
7.	Jan. 27,	Paul,	2.80	495	
8.	May 20,	do	2.60	418	
9.	Sept. 5,	do	1.80	118	
	1900.				
10.	June 28,	U. S. G. S.,	1.80	139	
11.	Sept. 10,	do	1.77	131	
	1901.				
12.	July 30,	do	1.90	185	
13.	Dec. 28,	do	2.20	266	

DISCHARGE MEASUREMENTS OF ANTIETAM CREEK, AT SHARPSBURG, MARYLAND.—(Continued).

(Drainage area 295 square miles).

No.	Date.	Hydrographer.	Gage height.	Discharge.	Remarks.
			Feet.	Sec.-ft.	
	1902.				
14.	Sept. 1,	Paul,	1.70	126	
	1903.				
15.	Mar. 13,	Murphy,	3.06	584	
16.	Sept. 4,	Paul,	2.10	224	
	1904.				
17.	July 1,	U. S. G. S.,	1.79	158	
18.	July 11,	do	1.79	150	

DISCHARGE TABLE FOR ANTIETAM CREEK, AT SHARPSBURG, MD., FROM JUNE 24, 1897, TO AUGUST 25, 1905.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.30	59	.20	652	.10	1820	7.00	3295	.80	4990
.40	74	.30	701	.20	1890	.10	3380	.90	5090
.50	91	.40	752	.30	1960	.20	3470	9.00	5195
.60	110	.50	805	.40	2030	.30	3560	.10	5300
.70	131	.60	860	.50	2105	.40	3650	.20	5405
.80	153	.70	915	.60	2180	.50	3740	.30	5510
.90	177	.80	975	.70	2255	.60	3830	.40	5615
2.00	203	.90	1035	.80	2330	.70	3920	.50	5720
.10	231	4.00	1095	.90	2405	.80	4015	.60	5830
.20	261	.10	1155	6.00	2480	.90	4110	.70	5940
.30	293	.20	1215	.10	2555	8.00	4205	.80	6050
.40	327	.30	1280	.20	2635	.10	4300	.90	6160
.50	362	.40	1345	.30	2715	.20	4395	10.00	6270
.60	399	.50	1410	.40	2795	.30	4490	.10	6380
.70	437	.60	1475	.50	2875	.40	4590	.20	6490
.80	476	.70	1540	.60	2955	.50	4690	.30	6605
.90	517	.80	1610	.70	3040	.60	4790	.40	6720
3.00	560	.90	1680	.80	3125	.70	4890	.50	6835
.10	605	5.00	1750	.90	3210				

Note:—This table is strictly applicable only for open-channel conditions. It is based on discharge measurements made during 1897-1904. It is well defined between gage heights 1.7 and 3.5 feet. Estimates above 3.5 feet and below 1.7 feet are based on the extension of the area and velocity curves. Overflow at this section begins at about gage height 6.0 feet. It was assumed to amount to 300 second-feet at gage height 10.0 feet, or a mean velocity in the overflow portion of about one-half the velocity in the main channel.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ANTIETAM CREEK, AT SHARPSBURG, MD.

1897. Day.	JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.9	177	1.5	91	1.7	131	1.5	91	1.45	82	1.7	131
2,	2.1	231	1.7	131	1.7	131	1.6	110	2.7	437	1.6	110
3,	1.85	165	1.7	131	1.6	110	1.4	74	2.1	231	1.6	110
4,	1.7	131	1.75	142	1.6	110	1.6	110	1.9	177	1.7	131
5,	1.75	142	1.6	110	1.5	91	1.7	131	1.6	110	2.25	277
6,	1.8	153	1.7	131	1.7	131	1.6	110	1.6	110	2.45	344
7,	1.7	131	1.7	131	1.7	131	1.7	131	1.7	131	2.05	217
8,	1.7	131	1.5	91	1.6	110	1.6	110	1.75	142	2.0	203
9,	1.7	131	1.4	74	1.65	120	1.5	91	1.8	153	1.8	153
10,	1.7	131	1.7	131	1.6	110	1.4	74	1.6	110	1.9	177
11,	1.55	100	1.9	177	1.6	110	1.5	91	1.55	100	1.9	177
12,	1.75	142	1.85	165	1.5	91	1.6	110	1.5	91	1.9	177
13,	1.95	190	1.6	110	1.4	74	1.7	131	1.6	110	2.05	217
14,	1.8	153	1.7	131	1.5	91	1.5	91	1.4	74	2.0	203
15,	1.8	153	2.45	344	1.6	110	1.6	110	1.5	91	2.35	310
16,	1.8	153	1.9	177	1.7	131	1.65	120	1.75	142	2.4	327
17,	1.75	142	1.8	153	1.6	110	1.6	110	1.7	131	2.2	261
18,	1.7	131	1.7	131	1.6	110	1.4	74	1.6	110	2.1	231
19,	1.75	142	1.6	110	1.6	110	1.5	91	1.5	91	2.0	203
20,	1.75	142	1.5	91	1.5	91	1.7	131	1.6	110	2.1	231
21,	1.85	165	1.5	91	1.6	110	1.7	131	1.7	131	2.0	203
22,	1.85	165	1.55	100	1.6	110	1.6	110	1.6	110	2.0	203
23,	1.7	131	1.6	110	1.7	131	1.6	110	1.5	91	2.1	231
24,	1.7	131	3.0	560	1.9	177	1.65	120	1.7	131	2.5	362
25,	1.55	100	2.9	517	1.8	153	1.65	120	1.8	153	2.2	261
26,	1.65	120	2.0	203	1.5	91	1.8	153	1.8	153	2.0	203
27,	1.75	142	1.75	142	1.7	131	1.7	131	1.9	177	2.0	203
28,	1.8	153	1.7	131	1.6	110	1.6	110	2.0	203	1.9	177
29,	1.85	165	1.55	100	1.6	110	1.6	110	1.9	177	1.8	153
30,	1.8	153	1.8	153	1.5	91	1.6	110	1.8	153	1.8	153
31,	1.7	131	1.7	131	------	------	1.5	91	------	------	1.9	177

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ANTIETAM CREEK, AT SHARPSBURG, MD.

1898.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.0	203	2.4	327	2.1	231	2.8	476	2.0	203	2.4	327	1.8	153	2.0	203	1.9	177	1.8	153	2.1	231	2.3	293
2,	2.4	327	2.6	399	2.1	231	2.7	437	2.0	203	2.3	293	1.7	131	1.9	177	1.9	177	1.8	153	2.1	231	2.2	261
3,	2.1	231	2.9	517	2.1	231	2.6	399	2.0	203	2.2	261	1.8	153	1.8	153	1.9	177	1.7	131	2.0	203	2.0	203
4,	1.8	153	2.5	362	2.1	231	2.5	362	2.0	203	2.2	261	1.8	153	1.9	177	1.9	177	1.7	131	2.1	231	2.6	399
5,	1.7	131	2.4	327	2.2	261	2.6	399	2.0	203	2.1	231	1.8	153	2.5	362	2.1	231	1.7	131	1.9	177	7.8	4015
6,	1.5	91	2.2	261	2.1	231	2.5	362	2.1	231	2.2	261	1.8	153	2.0	203	2.0	203	1.6	110	1.8	153	3.85	1005
7,	1.9	177	2.4	327	2.1	231	2.5	362	2.2	261	2.2	261	1.7	131	1.8	153	1.9	177	1.7	131	1.8	153	3.25	674
8,	1.8	153	2.2	261	2.1	231	2.5	362	2.4	327	2.1	231	1.7	131	1.8	153	1.9	177	1.6	110	1.7	131	3.0	560
9,	1.7	131	2.1	231	2.0	203	2.4	327	3.25	676	2.1	231	1.8	153	2.0	203	1.9	177	1.6	110	1.7	131	2.9	517
10,	2.0	203	2.1	231	2.0	203	2.4	327	2.7	437	2.1	231	1.8	153	3.1	605	1.8	153	1.6	110	1.9	177	2.8	476
11,	2.1	231	2.3	293	2.1	231	2.4	327	2.5	362	2.1	231	1.8	153	3.05	582	1.7	131	1.6	110	2.5	362	2.7	437
12,	1.9	177	2.2	261	2.1	231	2.3	293	2.4	327	2.15	246	1.8	153	2.3	293	1.9	177	1.8	153	2.15	246	2.7	437
13,	2.0	203	2.2	261	2.0	203	2.3	293	2.5	362	2.2	261	1.8	153	2.1	231	1.8	153	1.7	131	2.2	261	2.7	437
14,	1.8	153	2.2	261	2.0	203	2.3	293	2.3	293	2.2	261	1.8	153	2.0	203	1.8	153	1.8	153	2.2	261	2.8	476
15,	2.9	517	2.2	261	2.1	231	2.35	310	2.3	293	2.1	231	1.8	153	2.05	217	1.9	177	1.7	131	2.0	203	2.7	437
16,	3.15	628	2.1	231	2.0	203	2.4	327	2.9	517	2.1	231	1.7	131	2.0	203	1.8	153	1.5	91	2.0	203	2.8	476
17,	2.9	517	2.0	203	2.2	261	2.3	293	3.0	560	2.1	231	1.7	131	2.0	203	1.8	153	1.6	110	1.9	177	2.5	362
18,	2.5	362	2.2	261	2.2	261	2.3	293	2.8	476	2.1	231	1.8	153	5.07	1799	1.7	131	2.75	456	2.0	203	2.4	327
19,	2.3	293	2.3	293	2.2	261	2.3	293	2.6	399	2.0	203	1.8	153	3.65	888	1.9	177	1.8	153	2.6	399	2.5	362
20,	2.4	327	2.1	231	2.0	203	2.3	293	2.4	327	2.1	231	1.8	153	2.95	538	1.8	153	2.4	327	2.5	362	3.15	628
21,	2.4	327	2.6	399	2.1	231	2.2	261	2.4	327	2.0	203	1.8	153	2.45	344	1.8	153	2.2	261	2.4	327	2.9	517
22,	2.2	261	2.6	399	2.5	362	2.2	261	3.1	605	1.9	177	1.8	153	2.3	293	1.8	153	2.9	517	2.4	327	2.8	476
23,	2.85	496	2.4	327	2.55	380	2.2	261	2.5	362	2.1	231	1.8	153	2.1	231	1.9	177	2.8	476	2.3	293	3.85	1005
24,	2.8	476	2.6	399	2.7	437	2.2	261	3.0	560	2.1	231	1.8	153	2.0	203	1.9	177	1.9	177	2.4	327	3.2	652
25,	2.6	399	2.3	293	3.25	676	2.3	293	2.7	437	1.9	177	2.2	261	1.9	177	1.8	153	1.7	131	2.3	293	3.0	560
26,	2.6	399	2.3	293	2.95	538	2.3	293	2.9	517	1.9	177	1.9	177	2.0	203	1.8	153	2.4	327	2.3	293	2.9	517
27,	2.6	399	2.2	261	2.8	476	2.2	261	2.7	437	1.9	177	1.9	177	2.0	203	1.9	177	2.3	293	2.3	293	2.8	476
28,	2.5	362	2.3	293	2.7	437	2.2	261	2.7	437	1.8	153	1.8	153	1.9	177	1.8	153	2.1	231	2.3	293	2.6	399
29,	2.5	362			2.75	456	2.2	261	2.6	399	1.8	153	1.8	153	2.0	203	1.9	177	2.1	231	2.2	261	2.6	399
30,	2.4	327			3.1	605	2.1	231	2.5	362	1.8	153	1.8	153	2.0	203	1.8	153	2.1	231	2.2	261	2.5	362
31,	2.5	362			2.9	517			2.4	327			1.9	177	2.0	203			2.1	231			2.6	399

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ANTIETAM CREEK, AT SHARPSBURG, MD.

1899.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.8	476	2.7	437	4.75	1575	3.4	752	2.4	327	2.4	327	2.1	231	1.7	131	1.8	153	1.8	153	2.4	327	1.6	110
2,	2.7	437	2.6	399	4.2	1215	3.3	701	2.45	344	3.75	945	1.9	177	1.6	110	1.8	153	1.8	153	2.25	277	1.6	110
3,	2.6	399	2.6	399	4.1	1155	3.2	652	2.9	517	2.6	399	2.0	203	2.55	380	1.7	131	1.7	131	2.0	203	1.6	110
4,	2.7	437	2.6	399	3.85	1005	3.2	652	2.5	362	2.6	399	1.85	165	1.9	177	2.0	203	1.6	110	1.8	153	1.5	91
5,	3.0	560	2.8	476	4.8	1610	3.1	605	2.5	362	2.4	327	1.9	177	1.8	153	1.8	153	1.6	110	1.8	153	1.6	110
6,	3.4	752	2.8	476	4.4	1345	3.0	560	2.5	362	2.4	327	1.8	153	1.7	131	1.8	153	1.5	91	1.9	177	1.5	91
7,	3.55	832	2.5	362	4.05	1125	2.9	517	2.4	327	2.3	293	2.0	203	1.9	177	1.7	131	1.5	91	1.8	153	1.5	91
8,	3.2	652	2.4	327	3.9	1035	3.25	686	2.55	380	2.3	293	1.9	177	1.7	131	1.7	131	1.5	91	1.5	91	1.6	110
9,	3.0	560	2.6	399	3.6	860	3.1	605	2.7	437	2.45	344	1.9	177	1.7	131	1.85	165	1.7	131	1.6	110	1.6	110
10,	3.0	560	2.8	476	3.5	805	3.0	560	2.55	3.80	2.7	437	2.0	203	1.8	153	1.6	110	1.6	110	1.7	131	1.5	91
11,	2.9	517	2.6	399	3.5	805	2.9	517	2.5	362	2.65	418	1.9	177	1.8	153	2.3	293	1.5	91	1.6	110	1.5	91
12,	2.8	476	2.8	476	3.4	752	2.8	476	2.5	362	2.4	327	1.8	153	2.35	310	2.1	231	1.5	91	1.7	131	1.6	110
13,	2.9	517	2.8	476	3.3	701	2.8	476	2.5	362	2.4	327	2.15	246	1.9	177	1.85	165	1.5	91	1.7	131	1.6	110
14,	3.0	560	2.8	476	3.2	652	2.8	476	2.4	327	2.35	310	2.0	203	2.0	203	1.8	153	1.5	91	1.6	110	1.7	131
15,	3.0	560	2.9	517	3.2	652	2.8	476	2.3	293	2.3	293	1.9	177	1.9	177	1.7	131	1.4	74	1.6	110	1.8	153
16,	3.0	560	2.9	517	3.5	805	2.8	476	2.4	327	2.3	293	1.85	165	1.8	153	1.6	110	1.8	153	1.6	110	1.8	153
17,	3.0	560	2.8	476	3.2	652	2.7	437	2.2	261	2.3	293	1.95	190	1.9	177	1.6	110	1.7	131	1.8	153	1.7	131
18,	3.0	560	2.9	517	3.2	652	2.7	437	3.15	628	2.2	261	1.8	153	1.8	153	1.7	131	1.6	110	1.7	131	1.7	131
19,	2.9	517	2.9	517	3.7	915	2.7	437	2.8	476	2.25	277	1.85	165	1.8	153	2.0	203	1.6	110	1.7	131	1.6	110
20,	2.8	476	2.8	476	3.75	945	2.6	399	2.6	399	2.2	261	1.8	153	1.6	110	1.9	177	1.6	110	1.7	131	1.6	110
21,	2.8	476	3.2	652	3.4	752	2.6	399	2.5	362	2.2	261	1.8	153	1.8	153	1.9	177	1.6	110	1.7	131	1.7	131
22,	2.8	476	4.3	1280	3.4	752	2.6	399	2.5	362	2.1	231	1.8	153	1.7	131	1.8	153	1.6	110	1.8	153	1.6	110
23,	2.8	476	4.1	1155	3.5	805	2.5	362	2.5	362	2.0	203	2.05	217	1.8	153	1.8	153	1.7	131	1.8	153	1.6	110
24,	2.8	476	3.7	915	3.4	752	2.4	327	2.4	327	2.1	231	1.9	177	1.7	131	1.7	131	1.6	110	1.7	131	1.85	165
25,	3.25	674	3.5	805	3.3	701	2.5	362	2.3	293	2.05	217	1.7	131	1.65	120	1.9	177	1.6	110	1.6	110	2.65	418
26,	2.9	517	4.5	1410	3.2	652	2.45	344	2.3	293	2.2	261	1.75	142	1.7	131	1.9	177	1.5	91	1.6	110	1.9	177
27,	2.9	517	5.4	2030	3.0	560	2.5	362	2.3	293	2.1	231	1.7	131	3.45	778	1.8	153	1.5	91	1.7	131	2.0	203
28,	2.8	476	5.15	1855	3.5	805	2.5	362	2.3	293	2.15	246	1.6	110	2.8	476	1.8	153	1.5	91	1.6	110	1.9	177
29,	2.8	476	------	------	3.9	1035	2.5	362	2.2	261	2.1	231	1.6	110	2.3	293	1.9	177	1.5	91	1.7	131	1.8	153
30,	2.7	437	------	------	3.7	915	2.4	327	2.45	344	2.2	261	1.6	110	2.0	203	1.9	177	1.6	110	1.7	131	1.6	110
31,	2.7	437	------	------	3.5	805	------	------	2.4	327	------	------	1.8	153	1.9	177	------	------	1.6	110	------	------	1.6	110

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ANTIETAM CREEK, AT SHARPSBURG, MD.

1900.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.5	91	1.6	110	3.8	975	2.5	362	2.1	231	2.0	203	1.7	131	1.4	74	1.6	110	1.4	74	1.7	131	1.55	100
2,	1.5	91	1.7	131	3.6	860	2.5	362	2.1	231	1.9	177	1.7	131	1.4	74	1.6	110	1.5	91	1.5	91	1.55	100
3,	1.5	91	1.6	110	3.0	560	2.4	327	2.0	203	1.9	177	1.6	110	1.5	91	1.4	74	1.4	74	1.5	91	1.5	91
4,	1.6	110	1.5	91	2.8	476	2.3	293	2.1	231	2.0	203	1.5	91	1.5	91	1.6	110	1.4	74	1.5	91	2.3	293
5,	1.6	110	1.5	91	2.7	437	2.3	293	2.0	203	1.9	177	1.7	131	1.4	74	1.7	131	1.5	91	1.5	91	2.4	327
6,	1.7	131	1.6	110	2.7	437	2.3	293	1.9	177	1.9	177	1.7	131	1.4	74	1.6	110	1.4	74	1.4	74	2.0	203
7,	1.7	131	1.5	91	2.75	456	2.4	327	2.1	231	1.9	177	1.6	110	1.4	74	1.5	91	1.4	74	1.5	91	1.6	110
8,	1.8	153	2.0	203	2.6	399	2.3	293	2.0	203	1.9	177	1.6	110	1.4	74	1.5	91	1.3	59	1.6	110	1.7	131
9,	1.9	177	2.2	261	2.5	362	2.3	293	2.0	203	1.9	177	1.7	131	1.45	82	1.4	74	1.5	91	1.6	110	1.7	131
10,	1.8	153	2.0	203	2.5	362	2.2	261	1.9	177	1.7	131	1.6	110	1.5	91	1.4	74	1.6	110	1.6	110	1.6	110
11,	1.8	153	1.9	177	2.5	362	2.2	261	1.8	153	2.0	203	1.5	91	1.4	74	1.4	74	1.6	110	1.5	91	1.6	110
12,	1.8	153	2.0	203	2.5	362	2.3	293	1.9	177	1.9	177	1.55	100	1.5	91	1.4	74	1.5	91	1.4	74	1.5	91
13,	1.7	131	2.7	437	2.4	327	2.3	293	1.8	153	1.8	153	1.5	91	1.5	91	1.5	91	1.5	91	1.7	131	1.5	91
14,	1.7	131	2.7	437	2.4	327	2.3	293	1.8	153	1.7	131	1.55	100	1.4	74	1.6	110	2.05	217	1.5	91	1.5	91
15,	1.8	153	2.4	327	2.4	327	2.2	261	2.0	203	1.7	131	1.6	110	1.7	131	1.6	110	1.9	177	1.7	131	1.4	74
16,	1.7	131	2.4	327	2.4	327	2.3	293	1.9	177	1.85	165	1.45	82	1.6	110	1.8	153	1.7	131	1.5	91	1.3	59
17,	1.7	131	2.2	261	2.3	293	2.2	261	2.0	203	2.1	231	1.5	91	1.6	110	*1.6	110	1.6	110	1.5	91	1.5	91
18,	1.7	131	2.1	231	2.25	277	2.3	293	2.0	203	2.2	261	1.5	91	1.6	110	1.4	74	1.4	74	1.4	74	1.4	74
19,	1.8	153	2.2	261	2.4	327	2.35	310	2.4	327	2.55	380	1.5	91	1.6	110	1.5	91	1.6	110	1.5	91	1.5	91
20,	2.1	231	2.2	261	2.9	517	2.3	293	3.1	605	2.1	231	1.6	110	1.7	131	1.5	91	1.6	110	1.5	91	1.5	91
21,	2.5	362	2.3	293	3.1	605	2.7	437	2.4	327	2.0	203	1.5	91	1.8	153	1.5	91	1.4	74	1.6	110	1.5	91
22,	2.0	203	4.15	1185	2.8	476	2.3	293	2.2	261	1.9	177	1.4	74	1.8	153	1.4	74	1.5	91	1.5	91	1.5	91
23,	1.9	177	3.75	945	2.7	437	2.4	327	2.1	231	1.8	153	1.9	177	1.7	131	1.4	74	1.5	91	1.5	91	1.5	91
24,	1.8	153	3.05	582	2.7	437	2.3	293	2.1	231	1.7	131	1.85	165	1.7	131	1.3	59	1.8	153	1.5	91	1.4	74
25,	1.7	131	3.8	975	2.6	399	2.2	261	2.1	231	1.8	153	1.65	120	1.8	153	1.4	74	1.7	131	1.5	91	1.3	59
26,	2.3	293	3.3	701	2.5	362	2.2	261	2.0	203	1.8	153	2.0	203	1.7	131	1.4	74	1.5	91	2.5	362	1.6	110
27,	2.2	261	3.0	560	2.6	399	2.1	231	1.9	177	1.9	177	1.9	177	1.7	131	1.4	74	1.5	91	2.1	231	1.5	91
28,	2.0	203	3.0	560	2.5	362	2.1	231	1.9	177	1.8	153	1.8	153	2.0	203	1.4	74	1.4	74	1.8	153	1.5	91
29,	1.8	153	------	------	2.5	362	2.1	231	2.0	203	1.8	153	1.55	100	1.9	177	1.5	91	1.3	59	1.7	131	1.5	91
30,	1.6	110	------	------	2.6	399	2.0	203	1.9	177	1.7	131	1.4	74	1.8	153	1.6	110	1.4	74	1.6	110	1.4	74
31,	1.6	110	------	------	2.6	399	------	------	2.1	231	------	------	1.4	74	1.7	131	------	------	1.6	110	------	------	1.5	91

*Interpolated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ANTIETAM CREEK, AT SHARPSBURG, MD.

1901. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.5	91	1.5	91	1.5	91	2.8	476	2.5	362	2.8	476	2.2	261	1.9	177	2.5	362	2.0	203	1.6	110		
2,	1.5	91	1.4	74	1.5	91	2.7	437	2.5	362	2.8	476	2.1	231	1.8	153	2.3	293	1.9	177	1.6	110		
3,	1.4	74	1.4	74	1.4	74	3.3	701	2.4	327	2.6	399	2.1	231	1.7	131	2.1	231	2.2	261	1.4	74		
4,	1.4	74	1.4	74	1.5	91	5.25	1925	2.4	327	2.5	362	2.0	203	1.7	131	2.0	203	2.0	203	1.5	91		
5,	1.4	74	1.5	91	1.6	110	3.65	888	2.4	327	2.5	362	2.1	231	1.8	153	2.0	203	1.8	153	1.5	91		
6,	1.4	74	1.6	110	1.5	91	3.4	752	2.3	293	2.5	362	2.1	231	2.1	231	1.9	177	1.8	153	1.5	91		
7,	1.4	74	1.6	110	1.8	153	3.3	701	2.2	261	2.8	476	2.1	231	2.6	399	1.8	153	1.8	153	1.6	110		
8,	1.4	74	1.5	91	1.7	131	3.2	652	2.3	293	2.7	437	2.1	231	2.4	327	1.7	131	1.7	131	1.6	110		
9,	1.4	74	1.5	91	1.6	110	3.1	605	2.3	293	2.6	399	2.0	203	2.2	261	1.6	110	1.7	131	1.6	110		
10,	1.5	91	1.4	74	1.6	110	2.85	496	2.2	261	2.4	327	2.0	203	2.0	203	1.6	110	1.6	110	1.6	110		
11,	1.5	91	1.4	74	5.35	1995	2.7	437	2.1	231	2.3	293	2.1	231	1.9	177	1.6	110	1.6	110	1.6	110		
12,	1.7	131	1.4	74	3.35	726	2.6	399	2.3	293	2.3	293	2.2	261	1.8	153	1.7	131	1.6	110	1.6	110		
13,	1.6	110	1.3	59	2.45	344	2.5	362	2.2	261	2.2	261	2.1	231	1.8	153	1.7	131	1.6	110	1.5	91		
14,	1.6	110	1.5	91	2.2	261	2.7	437	2.2	261	2.2	261	2.1	231	1.7	131	1.6	110	1.7	131	1.5	91		
15,	1.5	91	1.4	74	2.3	293	4.3	1280	2.2	261	2.4	327	2.1	231	3.9	1035	2.6	399	1.7	131	1.5	91		
16,	1.5	91	1.6	110	2.2	261	3.45	778	2.2	261	2.8	476	2.2	261	2.2	261	2.0	203	1.6	110	1.4	74		
17,	1.6	110	1.4	74	2.2	261	2.9	517	2.2	261	2.6	399	2.5	362	2.1	231	2.1	231	1.6	110				
18,	1.5	91	1.5	91	2.1	231	2.7	437	2.2	261	2.5	362	2.2	261	2.0	203	2.0	203	1.5	91				
19,	1.4	74	1.6	110	2.1	231	2.6	399	2.2	261	2.4	327	2.1	231	1.9	177	1.8	153	1.5	91				
20,	1.4	74	1.6	110	2.0	203	2.95	538	2.15	246	2.3	293	2.0	203	1.8	153	1.7	131	1.6	110				
21,	1.5	91	1.7	131	2.45	344	3.6	860	2.1	231	2.3	293	2.5	362	1.9	177	1.7	131	1.6	110				
22,	1.5	91	1.7	131	2.4	327	3.6	860	4.8	1610	2.3	293	2.2	261	1.8	153	1.7	131	1.5	91				
23,	1.6	110	1.8	153	2.2	261	3.2	652	6.3	2715	2.3	293	2.1	231	1.9	177	1.7	131	1.5	91				
24,	1.6	110	1.6	110	2.2	261	3.0	560	3.7	915	2.3	293	2.1	231	2.0	203	1.7	131	1.5	91				
25,	1.6	110	1.3	59	2.1	231	2.9	517	3.85	1005	2.2	261	2.5	362	2.0	203	1.6	110	1.5	91				
26,	1.6	110	1.4	74	2.2	261	2.8	476	3.4	752	2.2	261	2.1	231	2.0	203	1.6	110	1.8	153				
27,	1.4	74	1.5	91	2.25	277	2.9	517	3.4	752	2.3	293	2.1	231	1.9	177	1.7	131	1.7	131				
28,	1.4	4	1.5	91	2.2	261	2.8	476	3.1	605	2.3	293	2.0	203	1.7	131	1.7	131	1.7	131			2.2	261
29,	1.5	91			2.2	261	2.7	437	3.0	560	2.35	310	1.9	177	1.7	131	1.6	110	1.6	110			4.7	1540
30.	1.5	91			2.1	231	2.6	399	3.5	805	2.2	261	1.9	177	1.7	131	2.15	246	1.7	131			4.5	1410
31,	1.5	91			2.2	261			3.0	560			1.8	153	2.05	217			1.7	131			3.3	701

Note—November 17-December 27, no readings taken.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ANTIETAM CREEK, AT SHARPSBURG, MD.

1902. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.9	517	2.4	327	7.0	3295	2.9	517	2.6	399	2.1	231	2.2	261	2.6	399	1.7	131	1.7	131	1.6	110	1.8	153
2,	2.7	437	2.4	327	5.05	1785	2.9	517	2.5	362	2.2	261	2.1	231	2.4	327	1.6	110	1.8	153	1.7	131	2.4	327
3,	2.7	437	2.6	399	4.6	1475	2.8	476	2.5	362	2.2	261	2.1	231	1.8	153	1.6	110	1.6	110	1.7	131	4.05	1125
4,	2.5	362	2.5	362	3.9	1035	2.8	476	2.5	362	2.2	261	2.0	203	1.8	153	1.7	131	1.6	110	1.6	110	3.6	860
5,	2.4	327	2.4	327	4.0	1095	2.8	476	2.5	362	2.1	231	2.0	203	1.9	177	1.6	110	2.3	293	1.6	110	2.6	399
6,	2.4	327	2.3	293	3.6	860	2.7	437	2.4	327	2.1	231	1.9	177	1.9	177	1.5	91	2.1	231	1.7	131	2.5	362
7,	2.3	293	2.2	261	3.5	805	2.9	517	2.4	327	2.1	231	2.3	293	1.9	177	1.5	91	1.9	177	1.7	131	2.3	293
8,	2.3	293	2.1	231	3.5	805	3.9	517	2.4	327	2.0	203	2.7	437	1.7	131	1.4	74	1.7	131	1.7	131	2.1	231
9,	2.3	293	2.1	231	3.7	915	6.45	2835	2.3	293	2.0	203	2.7	437	1.7	131	1.6	110	1.7	131	1.7	131	1.8	153
10,	2.3	293	2.3	293	4.2	1215	4.45	1378	2.3	293	2.0	203	3.5	805	1.6	110	1.6	110	1.6	110	1.7	131	1.9	177
11,	2.3	293	2.4	327	4.4	1345	3.9	1035	2.4	327	2.0	203	2.0	203	1.8	153	1.7	131	1.8	153	1.6	110	2.0	203
12,	2.2	261	2.2	261	4.4	1345	3.6	860	2.3	293	2.1	231	2.0	203	1.8	153	1.6	110	1.8	153	1.6	110	2.4	327
13,	2.2	261	2.3	293	4.8	1610	3.5	805	2.3	293	2.2	261	1.8	153	1.7	131	1.7	131	2.1	231	1.6	110	2.8	476
14,	2.2	261	2.2	261	4.7	1540	3.3	701	2.3	293	2.2	261	1.8	153	1.6	110	1.5	91	1.9	177	1.5	91	2.7	437
15,	2.1	231	2.2	261	3.9	1035	3.2	652	2.3	293	2.2	261	1.8	153	1.6	110	1.4	74	1.8	153	1.5	91	2.7	437
16,	2.1	231	2.0	203	3.7	915	3.1	605	2.2	261	2.3	293	1.8	153	1.6	110	1.6	110	1.7	131	1.6	110	2.8	476
17,	2.1	231	2.2	261	5.1	1820	3.1	605	2.2	261	2.4	327	1.7	131	1.4	74	1.6	110	1.7	131	1.7	131	4.1	1155
18,	2.1	231	2.1	231	4.2	1215	3.0	560	2.2	261	2.4	327	1.7	131	1.4	74	1.6	110	1.7	131	1.7	131	3.8	975
19,	2.1	231	1.9	177	3.7	915	2.9	517	2.9	517	2.2	261	2.4	327	1.5	91	1.6	110	1.6	110	1.6	110	3.8	975
20,	2.1	231	2.0	203	3.5	805	2.9	517	2.4	327	2.3	293	2.7	437	1.5	91	1.5	91	1.8	153	1.6	110	3.5	805
21,	3.8	975	3.15	628	3.6	860	2.8	476	2.3	293	2.3	293	1.8	153	2.0	203	1.5	91	1.7	131	1.6	110	3.6	860
22,	4.25	1248	4.7	1540	3.4	752	2.8	476	2.3	293	2.0	203	1.8	153	2.0	203	1.4	74	1.7	131	1.5	91	3.8	975
23,	2.7	437	3.6	860	3.4	752	2.8	476	2.2	261	2.0	203	1.7	131	1.9	177	1.5	91	1.8	153	1.5	91	3.6	860
24,	2.4	327	3.5	805	3.4	752	2.7	437	2.2	261	2.0	203	1.7	131	1.7	131	1.7	131	1.7	131	1.5	91	3.1	605
25,	2.4	327	6.2	2635	3.1	605	2.7	437	2.4	327	1.9	177	1.9	177	1.5	91	1.7	131	1.7	131	1.6	110	3.1	605
26,	2.3	293	10.5*	6835	3.0	560	2.6	399	2.6	399	2.2	261	1.8	153	1.5	91	1.8	153	1.7	131	1.8	153	2.8	476
27,	4.25	1248	5.15	1855	3.0	560	2.6	399	2.2	261	2.2	261	1.8	153	1.5	91	2.3	293	1.7	131	2.2	261	2.9	517
28,	3.2	652	7.45	3695	2.9	517	2.6	399	2.3	293	2.2	261	1.7	131	1.6	110	1.6	110	1.7	131	2.1	231	3.0	560
29,	2.7	437	------	------	3.4	752	2.6	399	2.2	261	2.2	261	1.7	131	1.5	91	1.6	110	2.1	231	1.8	153	3.2	652
30,	2.6	399	------	------	3.1	605	2.7	437	2.2	261	2.4	327	1.9	177	1.5	91	1.5	91	1.8	153	2.3	293	3.1	605
31,	2.4	327	------	------	3.0	560	------	------	2.2	261	------	------	2.55	380	1.4	74	------	------	1.6	110	------	------	3.1	605

*Gage height estimated Feb. 26, 1902.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ANTIETAM CREEK, AT SHARPSBURG, MD.

1903.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.7	915	3.5	805	4.3	1280	3.2	652	2.9	517	2.5	362	3.9	1035	2.5	362	2.3	293	2.0	203	1.85	165	1.9	177
2,	3.9	1035	3.2	652	3.8	975	3.1	605	2.9	517	2.4	327	3.0	560	2.5	362	2.2	261	1.95	190	1.9	177	1.9	177
3,	4.8	1610	3.4	752	3.6	860	3.1	605	2.9	517	2.3	293	2.8	476	2.4	327	2.2	261	1.95	190	1.9	177	1.8	153
4,	4.5	1410	4.1	1155	3.9	1035	3.2	652	2.8	476	2.3	293	3.0	560	2.4	327	2.1	231	2.0	203	1.9	177	1.9	177
5,	4.3	1280	3.3	975	4.1	1155	3.0	560	2.9	517	2.3	293	3.0	560	2.6	399	2.1	231	1.9	177	1.8	153	1.9	177
6,	4.3	1280	3.5	805	3.8	975	2.9	517	2.8	476	2.35	310	3.8	975	2.6	399	2.05	217	1.9	177	1.8	153	1.85	165
7,	4.1	1155	3.2	652	4.0	1095	3.0	560	2.7	437	2.4	327	2.9	517	2.7	437	2.0	203	1.85	165	1.8	153	1.85	165
8,	3.8	975	3.2	652	3.8	975	3.2	652	2.7	437	2.45	344	2.8	476	2.5	362	2.1	231	3.0	560	1.85	165	1.85	165
9,	3.6	860	3.4	752	3.6	860	3.3	701	2.7	437	2.6	399	2.7	437	2.6	399	2.3	293	2.5	362	1.85	165	1.9	177
10	2.8	476	3.3	701	3.5	805	3.1	605	2.6	399	2.4	327	2.7	437	2.6	399	2.2	261	2.2	261	1.85	165	1.9	177
11,	2.8	476	4.5	1410	3.3	701	3.1	605	2.6	399	2.35	310	3.3	701	2.5	362	2.1	231	2.1	231	1.8	153	1.85	165
12,	2.7	437	4.7	1540	3.2	652	3.1	605	2.5	362	2.5	362	*7.9	4110	2.5	362	2.1	231	2.1	231	1.9	177	1.8	153
13,	2.7	437	4.5	1410	3.1	605	3.1	605	2.5	362	2.5	362	6.1	2555	2.3	293	2.1	231	2.1	231	1.9	177	1.8	153
14,	2.6	399	4.0	1095	3.0	560	4.5	1410	2.4	327	2.45	344	3.7	915	2.3	293	2.2	261	2.0	203	1.9	177	1.9	177
15,	2.6	399	3.8	975	3.0	560	5.7	2255	2.4	327	2.5	362	3.3	701	2.2	261	2.2	261	2.0	203	1.85	165	2.0	203
16,	2.7	437	3.7	915	2.9	517	6.7	3040	2.4	327	2.4	327	3.0	560	3.6	860	2.1	231	2.1	231	1.85	165	2.3	293
17,	2.6	399	3.5	805	2.9	517	5.45	2068	2.5	362	2.3	293	3.0	560	3.2	652	3.0	560	2.15	246	1.95	190	2.0	203
18,	2.6	399	3.2	652	2.8	476	4.6	1475	2.4	327	2.4	327	3.2	652	2.4	327	2.4	327	2.05	217	1.9	177	2.0	203
19,	2.7	437	3.0	560	2.8	476	4.3	1280	2.4	327	2.3	293	3.2	652	2.4	327	2.2	261	2.0	203	1.9	177	1.9	177
20,	2.9	517	2.8	476	2.7	437	4.0	1095	2.4	327	2.5	362	3.0	560	2.3	293	2.2	261	2.1	231	1.9	177	2.6	399
21,	3.5	805	2.6	399	2.9	517	3.8	975	2.4	327	2.4	327	3.0	560	2.2	261	2.1	231	2.1	231	1.9	177	2.5	362
22,	3.9	1035	2.5	362	3.0	560	3.6	860	2.4	327	2.3	293	3.0	560	2.2	261	2.0	203	2.1	231	1.95	190	2.0	203
23,	3.7	915	2.5	362	3.1	605	3.5	805	2.4	327	2.4	327	2.7	437	2.2	261	1.9	177	2.1	231	1.95	190	1.9	177
24,	3.5	805	2.3	293	3.5	805	3.4	752	2.6	399	2.3	293	2.7	437	2.2	261	1.9	177	2.1	231	1.95	190	1.9	177
25,	3.5	805	2.6	399	3.3	701	3.4	752	2.5	362	2.35	310	2.6	399	2.2	261	1.9	177	2.0	203	2.0	203	1.85	165
26,	3.6	860	3.0	560	3.2	652	3.3	701	2.5	362	2.3	293	2.6	390	2.3	293	2.0	203	2.0	203	1.8	153	1.9	177
27,	4.2	1215	4.45	1378	3.1	605	3.2	652	2.4	327	2.3	293	2.5	362	2.1	231	2.0	203	2.0	203	1.8	153	1.8	153
28,	4.4	1345	5.75	2292	2.9	517	3.1	605	2.4	327	2.3	293	2.5	362	2.0	203	2.0	203	2.0	203	1.9	177	2.0	203
29,	4.2	1215	-----	-----	2.8	476	3.0	560	2.3	293	3.6	860	2.7	437	2.7	437	1.9	177	2.0	203	1.9	177	2.0	203
30,	3.9	1035	-----	-----	4.2	1215	3.0	560	3.3	701	3.1	605	2.8	476	2.5	362	1.9	177	1.9	177	1.9	177	1.9	177
31,	3.5	805	-----	-----	4.0	1095	-----	-----	2.6	399	-----	-----	2.7	437	2.4	327	-----	-----	1.9	177	-----	-----	1.9	177

Ice conditions during part of December, 1903.
*Highest record, 10.2 feet, 6 p. m., July 12, 1903.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ANTIETAM CREEK AT SHARPSBURG, MD.

1904. Day.	JAN.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.9	177	------	------	1.6	110	1.5	91	1.45	82	1.5	91	1.45	82
2,	1.9	177	------	------	1.6	110	1.5	91	1.45	82	1.5	91	1.45	82
3,	1.75	142	------	------	1.8	153	1.5	91	1.4	74	1.45	82	1.45	82
4,	2.1	231	------	------	1.65	120	1.6	110	1.55	100	1.5	91	1.45	82
5,	1.9	177	------	------	1.6	110	1.55	100	1.5	91	1.5	91	1.4	74
6,	1.9	177	------	------	1.6	110	1.5	91	1.45	82	1.45	82	1.5	91
7,	1.8	153	------	------	1.6	110	1.45	82	1.5	91	1.4	74	1.45	82
8,	1.8	153	------	------	1.5	91	1.55	100	1.45	82	1.5	91	1.45	82
9,	1.8	153	------	------	1.5	91	1.45	82	1.45	82	1.5	91	1.45	82
10,	1.85	165	------	------	1.5	91	1.85	165	1.5	91	1.5	91	1.5	91
11,	1.85	165	------	------	3.0	560	1.6	110	1.5	91	1.5	91	1.55	100
12,	1.9	177	2.2	261	1.8	153	1.55	100	1.5	91	1.5	91	1.4	74
13,	1.85	165	2.2	261	1.65	120	1.5	91	1.75	142	1.6	110	1.6	110
14,	1.85	165	1.9	177	1.55	100	1.65	120	1.6	110	1.5	91	1.5	91
15,	1.7	131	1.75	142	1.6	110	1.65	120	1.5	91	1.65	120	1.45	82
16,	1.7	131	1.7	131	1.6	110	1.8	153	1.45	82	1.5	91	1.55	100
17,	1.7	131	1.7	131	1.6	110	1.6	110	1.4	74	1.5	91	1.55	100
18,	1.8	153	1.7	131	1.6	110	1.5	91	1.5	91	1.4	74	1.55	100
19,	1.8	153	1.7	131	1.65	120	1.4	74	1.5	91	1.4	74	1.55	100
20,	1.8	153	1.6	110	1.6	110	1.65	120	1.5	91	1.5	91	1.6	110
21,	1.85	165	1.65	120	1.6	110	1.6	110	1.65	120	1.5	91	1.65	120
22,	3.9	1035	1.6	110	1.6	110	1.6	110	1.95	190	1.55	100	1.65	120
23,	6.0	2480	1.7	131	1.85	165	1.55	100	1.65	120	1.55	100	1.55	100
24,	------	------	1.75	142	1.75	142	1.5	91	1.6	110	1.5	91	1.6	110
25,	------	------	1.85	165	1.6	110	1.45	82	1.5	91	1.55	100	1.65	120
26,	------	------	1.7	131	1.6	110	1.5	91	1.55	100	1.5	91	1.75	142
27,	------	------	1.6	110	1.55	100	1.55	100	1.5	91	1.45	82	1.7	131
28,	------	------	1.6	110	1.45	82	1.5	91	1.5	91	1.35	66	1.8	153
29,	------	------	1.85	165	1.5	91	1.5	91	1.55	100	1.45	82	2.15	246
30,	------	------	1.7	131	1.5	91	1.45	82	1.45	82	1.5	91	2.05	217
31,	------	------	1.6	110	1.5	91	------	------	1.5	91	------	------	1.75	142

Note:—Ice conditions during January, 1904, no corrections made in estimates.
Ice carried gage away January 23, 1904; re-established July 12, 1904.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ANTIETAM CREEK, AT SHARPSBURG, MD.

1905.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.65	120	1.85	165	1.75	142	2.75	456	2.1	231	1.85	165	1.8	153	2.25	277
2,	1.6	110	1.9	177	1.7	131	2.6	399	2.1	231	1.9	177	1.8	153	2.05	217
3,	1.7	131	1.9	177	1.7	131	2.6	399	2.05	217	1.8	153	1.85	165	2.0	203
4,	1.75	142	1.8	153	1.7	131	2.6	399	2.05	217	1.75	142	1.8	153	2.0	203
5,	1.9	177	1.75	142	1.95	190	2.7	437	2.0	203	1.7	131	2.95	538	2.0	203
6,	1.75	142	2.0	203	2.0	203	2.8	476	2.0	203	1.75	142	2.1	231	2.0	203
7,	3.5	805	1.9	177	2.1	231	2.65	418	2.0	203	2.15	246	2.0	203	2.0	203
8,	2.7	437	2.0	203	2.15	246	2.55	380	2.05	217	2.1	231	1.95	190	2.2	261
9,	2.25	277	1.85	165	2.8	476	2.5	362	2.0	203	1.95	190	1.85	165	2.35	310
10,	2.1	231	1.85	165	3.4	752	2.5	362	2.0	203	1.8	153	1.8	153	2.3	293
11,	2.1	231	1.9	177	3.05	582	2.55	380	1.95	190	1.8	153	1.75	142	2.0	203
12,	2.05	217	1.8	153	2.95	538	2.55	380	2.0	203	2.1	231	1.85	165	2.0	203
13,	2.45	344	1.9	177	2.8	476	2.45	344	1.95	190	2.2	261	1.8	153	1.9	177
14,	2.2	261	1.9	177	2.8	476	2.5	362	1.95	190	2.0	203	1.85	165	1.9	177
15,	2.05	217	1.75	142	2.7	437	2.45	344	2.05	217	1.9	177	3.25	674	2.0	203
16,	2.45	344	1.8	153	2.6	399	2.4	327	2.0	203	1.8	153	2.15	246	2.3	293
17,	2.55	380	1.8	153	2.7	437	2.4	327	2.0	203	1.8	153	2.05	217	2.3	293
18,	2.1	231	1.85	165	2.95	538	2.3	293	2.25	277	1.75	142	2.0	203	2.1	231
19,	1.95	190	1.8	153	3.1	605	2.3	293	2.05	217	1.7	131	2.45	344	2.1	231
20,	1.9	177	1.85	165	3.6	860	2.3	293	2.05	217	1.8	153	2.4	327	2.1	231
21,	1.9	177	1.8	153	3.6	860	2.3	293	1.95	190	2.05	217	1.9	177	2.1	231
22,	1.9	177	1.7	131	3.4	752	2.3	293	1.9	177	2.0	203	1.8	153	2.3	293
23,	1.85	165	1.7	131	3.2	652	2.2	261	1.85	165	2.0	203	2.25	277	2.2	261
24,	1.75	142	1.7	131	3.05	582	2.2	261	1.8	153	2.6	399	5.0	1750	2.1	231
25,	1.8	153	1.7	131	3.95	1065	2.2	261	1.8	153	2.2	261	3.65	888	6.05	2518
26,	1.8	153	1.75	142	3.8	975	2.1	231	1.8	153	1.9	177	2.25	277	-----	-----
27,	2.05	217	1.95	190	3.35	726	2.1	231	1.85	165	2.0	203	2.0	203	-----	-----
28,	2.0	203	1.85	165	3.1	605	2.1	231	1.8	153	1.95	190	2.0	203	-----	-----
29,	2.0	203	-----	-----	3.0	560	2.1	231	1.85	165	1.95	190	2.0	203	-----	-----
30,	1.9	177	-----	-----	2.9	517	2.1	231	1.9	177	1.85	165	2.65	418	-----	-----
31,	1.9	177	-----	-----	2.8	476	-----	-----	1.9	177	-----	-----	2.45	344	-----	-----

Note:—Ice conditions during part of February, 1905, no corrections made in estimates.
Gage washed out August 26, 1905.

ESTIMATED MONTHLY DISCHARGE OF ANTIETAM CREEK AT SHARPSBURG, MD.

(Drainage Area 295 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1897.					
July,	231	100	146	.495	571
August,	560	74	161	.546	.630
September,	177	74	114	.386	.431
October,	153	74	109	.369	.425
November,	437	74	140	.475	.530
December,	362	110	210	.712	.821
1898.					
January,	628	91	303	1.030	1.190
February,	517	203	302	1.020	1.060
March,	676	203	312	1.060	1.220
April,	476	231	316	1.070	1.190
May,	676	203	375	1.270	1.460
June,	327	153	226	.766	.855
July,	261	131	159	.539	621
August,	1799	153	322	1.090	1.260
September,	231	131	167	.566	.632
October,	517	91	200	.678	.782
November,	399	131	249	.844	.942
December,	4015	203	598	2.030	2.340
The year,	4015	91	294	.997	13.550
1899.					
January,	832	399	529	1.790	2.060
February,	2030	327	682	2.310	2.400
March,	1610	560	897	3.040	3.500
April,	752	327	483	1.640	1.830
May,	517	261	358	1.210	1.400
June,	945	203	317	1.070	1.190
July,	246	110	169	.572	.660
August,	778	110	200	.678	782
September,	293	110	160	.542	.605
October,	153	74	109	.369	.425
November,	327	91	144	.488	.544
December,	418	91	133	.451	.520
The year,	2030	74	349	1.180	15.920
§1900.					
January,	362	91	158	.536	.618
February,	1185	91	372	1.260	1.310
March,	975	277	432	1.460	1.680
April,	362	203	291	.986	1.100
May,	605	153	222	.753	.868
June,	380	131	181	.614	.685
July,	203	74	115	.390	.450
August,	203	74	112	.380	.138
September,	153	59	92	.311	347
October,	217	59	99	.336	.387
November,	362	74	114	.386	.431
December,	327	59	110	.373	.430
The year,	1185	59	192	.649	8.750

§Discharge interpolated September 17, 1900.

ESTIMATED MONTHLY DISCHARGE OF ANTIETAM CREEK AT SHARPSBURG, MD.

(Drainage Area 295 Square Miles)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
§1901.					
January,	131	74	90	.307	.354
February,	152	59	92	.313	.326
March,	1995	74	285	.966	1.110
April,	1925	362	632	2.140	2.390
May,	2715	231	523	1.770	2.040
June,	476	261	341	1.160	1.290
July,	362	153	238	.807	.930
August,	1035	131	218	.739	.852
September,	399	110	171	.580	.647
October,	261	91	130	.441	.508
1902.					
January,	1248	231	410	1.390	1.600
February,	6835	177	871	2.950	3.070
March,	3295	517	1068	3.620	4.170
April,	2885	399	662	2.240	2.500
May,	517	261	313	1.060	1.220
June,	327	177	249	.844	0.942
July,	805	131	232	.786	0.906
August,	399	74	141	.478	0.551
September,	293	74	113	.383	0.427
October,	293	110	150	.508	0.586
November,	293	91	131	.444	0.495
December,	1155	153	570	1.930	2.220
The year,	6835	74	409	1.390	18.690
*1903.					
January,	1610	399	843	2.860	3.300
February,	2292	293	849	2.880	3.000
March,	1280	437	750	2.540	2.930
April,	3040	517	926	3.140	3.500
May,	701	293	398	1.350	1.560
June,	860	293	350	1.190	1.330
July,	4110	362	738	2.500	2.880
August,	800	203	354	1.200	1.380
September,	560	177	242	.820	.915
October,	560	165	226	.766	.883
November,	203	153	172	.583	.650
December,	399	153	195	.661	.762
The year,	4110	153	504	1.710	23.090
†1904.					
January (1-23),	2480	131	300	1.020	0.872
July (12-31),	261	110	145	0.492	0.366
August	269	82	126	0.427	0.492
September,	165	74	101	0.342	0.382
October,	190	74	97	0.328	0.378
November,	120	66	93	0.315	0.351
December,	246	74	110	0.373	0.430
‡1905.					
January,	805	110	229	.776	.895
February,	203	131	161	.546	569
March,	1065	131	508	1.720	1.980
April,	476	231	332	1.130	1.260
May,	231	153	196	.664	.766
June,	399	131	190	.644	.718
July,	1750	142	311	1.060	1.220
August (1-25),	2518	177	326	1.110	1.030

§Nov. 17- Dec. 27, no readings taken.
*Ice conditions during part of December, 1903, no corrections made in estimates.
†Ice conditions during January, 1904. No corrections made in estimates. Ice carried gage away January 23, re-established July 12, 1904.
‡Ice conditions during part of February, 1905. No corrections made in estimates.
Station discontinued August 25, 1905.

MONOCACY RIVER.

DESCRIPTION OF BASIN.

The Monocacy river, one of the largest tributaries of the Potomac river, rises in Adams county, Pennsylvania, in two branches; namely, Rock and Marsh creeks. Rock creek rises in the central part of Adams county, in Strabane township, and flows in a southerly direction into Maryland. Marsh creek rises in the western part of Adams county, in Franklin township, and flows southeasterly to its confluence with Rock creek, about one-quarter mile below the state line, thus forming the Monocacy river. Several tributaries joining the Monocacy river, in Maryland, drain portions of southwestern and southeastern Adams county, Pennsylvania; namely, Alleway, Piney and Middle creeks. The total drainage area of the Monocacy river is approximately 940 square miles, of which 231 lie in Pennsylvania. Its length, below the confluence of Rock and Marsh creeks, is about 55 miles. The river throughout the greater portion of its course flows through a rolling, limestone country of highly cultivated farms and is polluted by washings from tanneries and mills along its banks and its tributaries. The largest towns in its watershed are Gettysburg, Penna., and Frederick, Md., the former of which obtains part of its domestic water supply from Marsh creek, while the latter receives its domestic water supply from the parent stream. There are numerous small mills on its tributaries which are operated by water power.

The mean annual precipitation over this watershed, in Pennsylvania, is from 40 to 45 inches.

The discharge of this stream has been measured at Frederick, Md., since August 4th, 1896.

POTOMAC BASIN—STATION NO. 3.

MONOCACY RIVER NEAR FREDERICK, MD.

DESCRIPTION OF STATION.

This station was established on August 4th, 1896, by the United States Geological Survey and is being maintained through co-operation with the Maryland State Weather Bureau. It is located at the county iron bridge on the turnpike four miles northeast of Frederick, on the road leading from Frederick to Mt. Pleasant, Md.

The channel is straight for 300 feet above and 100 feet below the bridge. Both banks are low and liable to overflow, but all water passes beneath the bridge. The bed is composed of gravel and cobble stones, except near the bank, where it is composed of silt and is subject to change.

Discharge measurements are made from the two span highway bridge. The channel at this point is divided by a small, low island, which serves as a foundation for the pier of the bridge. The right channel is measured from the lower and the left channel from the upper side of the bridge. The pier and island obstruct the flow to some extent, causing dead water for 20 feet to the right of the pier at low water and eddies at high water. The initial point for soundings is a cross cut in the face of the parapet wall on the lower wing of the right abutment.

From August 4th, 1896, to September 3rd, 1902, readings were taken on a wire gage which was attached to the floor timbers on the lower side of the bridge, the pulley being 115 feet from an initial point established for making soundings, and the length of wire given to be 35.20 feet. On September 3rd, 1902, the wire gage was replaced by a standard chain gage, which is located in the middle of the first span from the right bank and is attached to the bridge floor on the lower side of the bridge. The length of chain from the bottom of the weight to the marker was 35.20 feet but was subsequently changed to 35.04 feet. The bench mark is a hole drilled in the top of a coping stone on the lower wing of the right abutment, about 100 feet back from the initial point for soundings. Its elevation is 29.17 feet above gage datum. The gage is read twice daily by E. L. Derr.

The discharge is liable to be affected by ice conditions, more or less, during the winter months. Israel creek enters the river about 2,000 feet below the station and Tuscarora creek about 3,000 feet above. All data prior to January 1st, 1903, when the wire gage was in operation, have been revised.

Owing to the change in channel conditions at this station four rating tables have been used.

Since the establishment of this station 37 discharge measurements have been made.

The following data have been furnished by the United States Geological Survey:

DISCHARGE MEASUREMENTS OF MONOCACY RIVER NEAR FREDERICK, MD.

(Drainage area 660 square miles).

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1896.							
1	Aug. 5,	Paul,	120	168	1.05	4.10	176	
2	Sept. 16,	do.	100	103	0.85	3.80	88	
3	Nov. 19,	do.	110	165	1.25	4.20	206	
	1897.							
4	Feb. 9,	Paul,	138	419	2.43	6.00	1 019	
5	Feb. 24,	Babb,	176	1,266	2.82	8.95	3,569	
6	Mar. 9,	Paul,	147	400	2.71	6.00	1,085	
7	Apr. 10,	do.	166	420	3.14	7.55	2,264	
8	July 3,	do.	115	166	1.33	4.30	220	
9	Sept. 3,	Matthes,	117	170	1.07	4.15	182	
10	Oct. 15,	Paul,	203	184	1.19	4.05	219	Msmt. made between B. & O. R. R. bridge and Canal Aqueduct.
11	Oct. 29,	do.	111	141	.86	4.40	122	Msmt. made at mouth of river.
	1898.							
12	Jan. 26,	Paul,	177	809	2.90	7.55	2,352	
13	Aug. 20,	do.	177	660	2.42	6.95	1,605	
	1899.							
14	May 22,	Paul,	135	294	2.15	5.20	633	
15	Sept. 6,	do.	103	134	1.14	4.50	153	
	1900.							
16	June 29,	Paul,	112	148	1.29	4.10	191	
17	Sept. 20,	Olberg,	107	109	0.81	3.80	88	
	1901.							
18	July 31,	Paul,	106	140	1.27	4.10	179	
19	Dec. 26,	do.	141	438	2.80	6.30	1,226	
	1902.							
20	Sept. 4,	Paul & Hayes,	97	114	.88	3.74	100	
	1903.							
21	Mar. 13,	Murphy,	198	644	1.99	6.49	1,282	
22	Apr. 17,	Paul & Bolster,	180	1,389	3.39	11.03	4,708	
23	Apr. 18,	do.	170	1,031	3.62	9.40	3,732	
24	Sept. 14,	Paul & Sawyer,	122	221	1.60	4.60	356	
25	Nov. 10,	Sawyer,	112	165	1.28	4.32	212	
	1904.							
26	July 12,	Hoyt & Grover,	172	384	1.24	5.18	475	
27	Sept. 26,	Grover,	195	184	0.54	3.71	100	
28	Oct. 20,	Murphy,	56	55	1.78	3.67	98	
	1905.							
29	Mar. 11,	Tillinghast & Comstock.	287	1,503	------	9.73	4,253	
30	Mar. 12,	Tillinghast & Comstock.	287	1,503	------	9.73	4,253	
31	June 21,	Grover & Lyman,	155	217	------	4.16	170	
32	Oct. 31,	Harley,	150	298	------	4.68	319	
	1906.							
33	May 31,	Follansbee & Waite,	160	324	1.01	4.70	328	
	1909.							
34	July 14,	Stevens,	------	218	------	4.16	142	
35	July 14,	Bolster,	------	48	------	3.81	59.4	Measurement by wading above bridge.
36	Sept. 30,	Stevens & Mathers,	------	225	------	4.16	146	
	1911.							
37	Nov. 18,	Mathers,	165	544	2.00	6.28	1,040	

DISCHARGE TABLE FOR MONOCACY RIVER NEAR FREDERICK, MD. FROM AUGUST 4, 1896, TO DEC. 31, 1903.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
3.40	43	.40	1295	.30	3900	.20	6810	.10	9855
.50	55	.50	1370	.40	4000	.30	6915	.20	9960
.60	69	.60	1445	.50	4100	.40	7020	.30	10065
.70	85	.70	1520	.60	4200	.50	7125	.40	10170
.80	103	.80	1600	.70	4300	.60	7230	.50	10275
.90	124	.90	1680	.80	4400	.70	7335	.60	10380
4.00	147	7.00	1760	.90	4500	.80	7440	.70	10485
.10	172	.10	1845	10.00	4600	.90	7545	.80	10590
.20	198	.20	1930	.10	4700	13.00	7650	.90	10695
.30	226	.30	2015	.20	4800	.10	7755	16.00	10800
.40	256	.40	2105	.30	4900	.20	7860	.10	10905
.50	288	.50	2195	.40	5000	.30	7965	.20	11010
.60	322	.60	2285	.50	5100	.40	8070	.30	11115
.70	358	.70	2375	.60	5200	.50	8175	.40	11220
.80	396	.80	2465	.70	5300	.60	8280	.50	11325
.90	437	.90	2555	.80	5400	.70	8385	.60	11430
5.00	480	8.00	2650	.90	5500	.80	8490	.70	11535
.10	525	.10	2745	11.00	5600	.90	8595	.80	11640
.20	575	.20	2840	.10	5700	14.00	8700	.90	11745
.30	625	.30	2935	.20	5800	.10	8805	17.00	11850
.40	675	.40	3030	.30	5900	.20	8910	18.00	12900
.50	730	.50	3125	.40	6000	.30	9015	19.00	13950
.60	785	.60	3220	.50	6100	.40	9120	20.00	15000
.70	840	.70	3315	.60	6200	.50	9225	21.00	16050
.80	900	.80	3410	.70	6300	.60	9330	22.00	17100
.90	960	.90	3505	.80	6400	.70	9435	23.00	18150
6.00	1025	9.00	3600	.90	6500	.80	9540	24.00	19200
.10	1090	.10	3700	12.00	6600	.90	9645	25.00	20250
.20	1155	.20	3800	.10	6705	15.00	9750	26.00	21300
.30	1225								

Note:—This table is strictly appplicable only for open-channel conditions. It is based on discharge measurements made during 1896-1903. It is fairly well defined between gage heights 4.0 feet and 9.0 feet. Above gage height 12.0 feet, the rating curve is a tangent, the difference being 105 per tenth.

DISCHARGE TABLE FOR MONOCACY RIVER NEAR FREDERICK, MD. FROM JAN. 1, 1904, TO DEC. 31, 1906.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
3.80	80	.70	789	.50	2130	.30	3810	.10	5600
.90	99	.80	846	.60	2220	.40	3905	.20	5700
4.00	120	.90	906	.70	2310	.50	4000	.30	5800
.10	144	6.00	969	.80	2400	.60	4100	.40	5900
.20	170	.10	1034	.90	2490	.70	4200	.50	6000
.30	198	.20	1102	8.00	2580	.80	4300	.60	6100
.40	228	.30	1172	.10	2670	.90	4400	.70	6200
.50	260	.40	1242	.20	2765	10.00	4500	.80	6300
.60	294	.50	1315	.30	2860	.10	4600	.90	6400
.70	330	.60	1390	.40	2955	.20	4700	12.00	6500
.80	368	.70	1465	.50	3050	.30	4800	13.00	7550
.90	408	.80	1545	.60	3145	.40	4900	14.00	8600
5.00	450	.90	1625	.70	3240	.50	5000	15.00	9650
.10	493	7.00	1705	.80	3335	.60	5100	16.00	10700
.20	538	.10	1790	.90	3430	.70	5200	17.00	11750
.30	584	.20	1875	9.00	3525	.80	5300	18.00	12800
.40	632	.30	1960	.10	3620	.90	5400	19.00	13850
.50	682	.40	2045	.20	3715	11.00	5500	20.00	14900
.60	734								

Note:—This table is strictly applicable only for open-channel conditions. It is based on discharge measurements made during 1904-1906. It is fairly well defined between gage heights 4.0 feet and 10.0 feet. Above gage height 12.0 feet the rating curve is tangent, the difference being 105 per tenth.

DISCHARGE TABLE FOR MONOCACY RIVER NEAR FREDERICK, MD. FOR 1907 AND 1908.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
3.90	90	.80	1545	.70	4200	.60	7130	.50	10175
4.00	113	.90	1625	.80	4300	.70	7235	.60	10280
.10	138	7.00	1705	.90	4400	.80	7340	.70	10385
.20	165	.10	1790	10.00	4500	.90	7445	.80	10490
.30	194	.20	1875	.10	4600	13.00	7550	.90	10595
.40	225	.30	1960	.20	4700	.10	7655	16.00	10700
.50	258	.40	2045	.30	4800	.20	7760	.10	10805
.60	293	.50	2130	.40	4900	.30	7865	.20	10910
.70	330	.60	2220	.50	5000	.40	7970	.30	11015
.80	368	.70	2310	.60	5100	.50	8075	.40	11120
.90	408	.80	2400	.70	5200	.60	8180	.50	11225
5.00	450	.90	2490	.80	5300	.70	8285	.60	11330
.10	493	8.00	2580	.90	5400	.80	8390	.70	11435
.20	538	.10	2670	11.00	5500	.90	8495	.80	11540
.30	584	.20	2765	.10	5600	14.00	8600	.90	11645
.40	632	.30	2860	.20	5700	.10	8705	17.00	11750
.50	682	.40	2955	.30	5800	.20	8810	.10	11855
.60	734	.50	3050	.40	5900	.30	8915	.20	11960
.70	789	.60	3145	.50	6000	.40	9020	.30	12065
.80	846	.70	3240	.60	6100	.50	9125	.40	12170
.90	906	.80	3335	.70	6200	.60	9230	.50	12275
6.00	969	.90	3430	.80	6300	.70	9335	.60	12380
.10	1034	9.00	3525	.90	6400	.80	9440	.70	12485
.20	1102	.10	3620	12.00	6500	.90	9545	.80	12590
.30	1172	.20	3715	.10	6605	15.00	9650	.90	12695
.40	1242	.30	3810	.20	6710	.10	9755	18.00	12800
.50	1315	.40	3905	.30	6815	.20	9860	19.00	13850
.60	1390	.50	4000	.40	6920	.30	9965	20.00	14900
.70	1465	.60	4100	.50	7025	.40	10070		

Note:—This table is not appplicable for ice or obstructed-channel conditions. It is based on discharge measurements made during 1900-1906, and is fairly well defined between gage heights 3.9 feet and 10 feet. Above 12 feet the rating curve is a tangent, the difference being 105 per tenth.

DISCHARGE TABLE FOR MONOCACY RIVER NEAR FREDERICK, MD. FOR 1909, 1910 AND 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
3.50	10	.90	79	.30	183	.70	320	.10	491
.60	22	4.00	102	.40	214	.80	360	.20	537
.70	38	.10	127	.50	247	.90	402	.30	584
.80	57	.20	154	.60	282	5.00	446		

Note:—The above table is not applicable for obstructed channel conditions. It is based on three discharge measurements made during 1909 and the 1904 to 1908 curve. It is fairly well defined between gage heights 3.8 and 10.0 feet. Above gage height 12.0 feet the rating curve is a tangent, the difference being 105 per tenth. Above gage height 5.3 feet same as 1907 and 1908 table.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MONOCACY RIVER NEAR FREDERICK, MD.

1896. Day.	AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,			3.6	69	4.8	396	3.9	124	4.8	396
2,			3.6	69	4.4	256	4.0	147	4.5	288
3,			3.6	69	4.1	172	4.0	147	4.5	288
4,	4.1	172	3.6	69	4.0	147	4.0	147	4.3	226
5,	4.1	172	3.6	69	3.9	124	5.45	702	4.3	226
6,	4.0	147	3.7	85	3.9	124	7.5	2195	4.1	172
7,	4.0	147	3.8	103	3.9	124	5.0	480	4.1	172
8,	3.9	124	3.9	124	3.9	124	4.5	288	4.1	172
9,	3.9	124	3.9	124	3.9	124	4.5	288	4.2	198
10,	3.9	124	3.8	103	3.9	124	4.8	396	4.2	198
11,	3.8	103	3.7	85	3.8	103	4.5	288	4.3	226
12,	3.9	124	3.7	85	3.8	103	4.5	288	4.2	198
13,	3.9	124	3.7	85	3.9	124	4.3	226	4.1	172
14,	3.9	124	3.7	85	4.2	198	4.3	226	4.1	172
15,	3.9	124	3.7	85	4.1	172	4.2	198	4.1	172
16,	3.8	103	3.75	94	4.1	172	4.2	198	4.1	172
17,	3.8	103	3.9	124	4.0	147	4.2	198	4.0	147
18,	4.4	256	3.9	124	3.9	124	4.2	198	4.0	147
19,	4.15	185	4.0	147	3.9	124	4.2	198	4.0	147
20,	3.9	124	4.0	147	3.8	103	4.2	198	4.0	147
21,	3.9	124	4.0	147	3.9	124	4.2	198	4.0	147
22,	3.9	124	3.9	124	3.9	124	4.0	147	3.9	124
23,	3.8	103	3.9	124	3.9	124	4.0	147	3.9	124
24,	3.7	85	3.8	103	3.9	124	4.0	147	4.1	172
25,	3.7	85	3.9	124	3.9	124	4.0	147	4.2	198
26,	3.9	124	3.8	103	3.9	124	4.0	147	4.1	172
27,	3.9	124	3.8	103	3.9	124	4.0	147	4.1	172
28,	3.8	103	3.8	103	3.9	124	4.0	147	4.1	172
29,	3.7	85	3.8	103	3.9	124	4.35	241	4.0	147
30,	3.6	69	5.0	480	3.9	124	5.2	575	4.0	147
31,	3.7	85			3.9	124			4.2	198

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MONOCACY RIVER, NEAR FREDERICK, MD.

1897.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.2	198	4.4	256	5.7	840	5.0	480	4.6	322	5.0	480	4.2	198	4.9	437	4.15	185	3.95	136	4.15	185	5.25	600
2,	4.2	198	4.4	256	5.5	730	5.0	480	6.3	1225	4.8	396	4.2	198	4.7	358	4.05	160	3.95	136	14.85	9592	5.15	550
3,	4.2	198	5.0	480	5.6	785	4.9	437	6.2	1155	4.7	358	4.3	226	4.5	288	4.15	185	3.85	114	8.15	2792	5.15	550
4,	4.2	198	6.0	1025	7.5	2195	4.9	437	6.2	1155	5.0	480	4.2	198	4.4	256	4.05	160	3.85	114	6.55	1408	8.15	2792
5,	4.2	198	5.5	730	7.5	2195	6.9	1680	6.0	1025	7.5	2195	4.2	198	4.4	256	4.05	160	3.75	94	5.35	650	12.4	7020
6,	4.3	226	8.4	3030	8.0	2650	5.9	960	5.9	960	5.6	785	4.2	198	4.3	226	3.95	136	3.85	114	5.05	502	8.65	3268
7	4.3	226	15.0	9750	7.6	2285	5.6	785	5.6	785	5.4	675	4.2	198	4.3	226	3.95	136	3.75	94	4.85	416	7.2	1930
8,	4.5	288	8.45	3078	6.2	1155	5.4	675	5.4	675	4.95	458	4.2	198	4.2	198	3.95	136	3.75	94	4.75	377	6.55	1408
9,	4.4	256	6.0	1025	6.0	1025	9.3	3900	5.1	525	6.15	1122	4.9	437	4.2	198	3.95	136	3.75	94	5.55	758	5.95	992
10,	4.3	226	5.6	785	6.5	1370	8.55	3172	5.0	480	5.8	900	4.5	288	4.2	198	3.95	136	3.85	114	5.55	758	5.75	870
11,	4.2	198	5.2	575	6.2	1155	6.55	1403	5.1	525	5.3	625	4.2	198	10.6	5200	3.95	136	3.85	114	4.85	416	5.55	758
12,	4.3	226	5.2	575	5.8	900	6.6	1445	5.1	525	5.0	480	4.2	198	8.5	3125	3.95	136	3.85	114	4.75	377	6.85	1640
13,	4.3	226	4.9	437	5.8	900	5.7	840	15.6	10380	4.9	437	7.0	1760	5.45	702	3.95	136	4.25	212	4.65	340	6.65	1482
14,	4.3	226	4.6	322	5.7	840	5.8	900	15.6	10380	4.7	358	5.2	575	4.45	272	3.85	114	4.15	185	4.55	305	10.65	5300
15,	4.0	147	4.6	322	5.7	840	5.9	960	10.9	5500	4.7	358	4.6	322	4.25	212	3.85	114	4.05	160	5.15	550	14.6	9330
16,	4.0	147	5.7	840	5.8	900	6.2	1155	7.4	2105	4.7	358	4.3	226	5.35	650	3.85	114	3.95	136	5.55	758	13.85	8542
17,	4.0	147	7.4	2105	5.4	675	5.8	900	6.8	1600	4.8	396	4.3	226	4.85	416	4.45	272	3.95	136	4.95	458	7.15	1888
18,	4.0	147	7.4	2105	6.6	1445	5.8	900	6.5	1370	4.8	396	5.1	525	4.3	226	4.45	272	3.85	114	4.75	377	6.65	1482
19,	4.3	226	6.7	1520	7.0	1760	5.5	730	6.1	1090	4.7	358	4.95	458	4.1	172	4.05	160	3.75	94	4.65	340	6.15	1122
20,	4.7	358	6.1	1090	9.8	4400	5.3	625	5.8	900	4.7	358	5.25	600	4.1	172	3.85	114	3.75	94	4.55	305	5.95	992
21,	4.5	288	5.7	840	7.6	2285	5.1	525	5.9	960	4.9	437	4.95	458	4.1	172	3.85	114	3.85	114	4.65	340	5.85	930
22,	5.5	730	12.1	6705	6.6	1445	5.0	480	6.0	1025	4.7	358	6.4	1295	5.5	730	3.95	136	3.95	136	4.55	305	6.55	1482
23,	5.4	675	14.6	9330	6.5	1370	5.0	480	5.5	730	4.5	288	5.65	812	4.8	396	3.95	136	3.95	136	4.75	377	6.05	1058
24,	4.8	396	8.85	3458	7.4	2105	5.0	480	5.3	625	4.5	288	4.95	458	16.2	11010	5.65	812	3.95	136	5.6	785	5.65	812
25,	5.2	575	8.3	2935	7.3	2015	4.9	437	6.7	1520	4.4	256	4.45	272	6.75	1560	5.15	550	4.05	160	4.85	416	5.15	550
26	5.0	480	7.0	1760	6.1	1090	4.9	437	6.0	1025	4.4	256	4.35	241	5.75	870	4.65	340	4.35	241	6.55	1408	5.55	758
27,	5.0	480	6.5	1370	5.8	900	4.9	437	5.3	625	4.4	256	7.7	2375	5.1	525	3.95	136	4.25	212	7.05	1802	5.45	702
28,	5.0	480	6.0	1025	5.6	785	4.8	396	5.2	575	4.4	256	9.9	4500	4.7	358	3.95	136	4.15	185	6.55	1408	5.45	702
29,	5.0	480	......	......	5.4	675	4.7	358	5.0	480	4.2	198	7.8	2465	4.35	241	3.95	136	4.05	160	5.85	930	5.35	650
30,	4.8	396	......	......	5.3	625	4.6	322	4.9	437	4.2	198	6.1	1090	4.15	185	3.95	136	4.05	160	5.65	812	5.35	650
31,	4.5	288	......	......	5.2	575	......	......	5.0	480	......	......	5.3	625	4.15	185	......	......	3.95	136	......	......	5.45	702

Note.—River frozen at the gage January 25 to February 2, 1897. All gage heights from July 3 to December 31, 1897, are liable to errors of one or two-tenths, owing to incorrect wire length.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MONOCACY RIVER, NEAR FREDERICK, MD.

1898 Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.25	600	5.4	675	5.4	675	7.1	1845	4.7	358	5.5	730	4.4	256	4.7	358	4.0	147	3.8	103	5.5	730	6.3	1225
2,	4.85	416	6.5	1370	5.3	625	6.9	1680	4.7	358	5.4	675	4.3	226	4.6	322	4.0	147	3.8	103	5.3	625	6.2	1155
3,	5.65	812	6.5	1370	5.3	625	6.0	1025	4.6	322	5.3	625	4.3	226	4.4	256	4.0	147	3.8	103	4.7	358	5.5	730
4.	5.35	650	6.5	1370	5.7	840	5.8	900	4.6	322	5.2	575	4.3	226	4.1	172	4.0	147	3.8	103	4.6	322	7.0	1760
5,	5.15	550	6.1	1090	6.2	1155	5.8	900	4.6	322	5.1	525	4.4	256	7.65	2330	3.9	124	3.8	103	4.5	288	17.95	12850
6,	5.15	550	6.1	1090	6.0	1025	5.8	900	4.6	322	5.1	525	4.4	256	6.9	1680	3.9	124	3.8	103	4.4	256	8.5	3125
7,	5.15	550	5.5	730	5.9	960	5.8	900	6.2	1155	5.1	525	4.4	256	5.1	525	3.9	124	3.8	103	4.4	256	7.0	1760
8,	5.25	600	5.0	480	5.5	730	5.5	730	8.25	2888	5.0	480	4.4	256	4.2	198	4.0	147	3.9	124	4.4	256	6.4	1295
9,	5.35	650	5.2	575	5.3	625	5.5	730	13.4	8070	5.0	480	4.4	256	4.1	172	4.0	147	3.9	124	4.4	256	5.7	840
10,	6.15	1122	5.4	675	5.2	575	5.2	575	7.5	2195	5.0	480	4.4	256	6.7	1520	4.0	147	3.8	103	4.7	358	5.5	730
11	6.75	1560	5.4	675	5.2	575	5.2	575	6.5	1370	5.0	480	4.3	226	12.4	7020	3.9	124	3.8	103	9.7	4300	5.3	625
12,	6.85	1640	6.0	1025	5.1	525	5.2	575	6.5	1370	5.0	480	4.2	198	6.0	1025	3.8	103	3.9	124	6.9	1680	5.3	625
13,	7.75	2420	6.2	1155	5.1	525	5.1	525	8.2	2840	5.0	480	4.2	198	5.4	675	3.8	103	3.8	103	5.4	675	5.3	625
14,	8.15	2792	5.6	785	5.1	525	5.1	525	6.0	1025	4.9	437	4.2	198	5.4	675	3.8	103	3.8	103	5.3	625	5.3	625
15,	11.55	6150	5.5	730	5.0	480	5.3	625	5.6	785	4.9	437	4.2	198	4.6	322	3.8	103	4.0	147	5.2	575	5.2	575
16,	11.05	5650	5.3	625	5.0	480	5.9	960	6.75	1560	4.8	396	4.1	172	4.5	288	3.8	103	4.2	198	5.0	480	5.0	480
17,	8.4	3030	5.2	575	5.0	480	5.5	730	11.55	6150	4.7	358	4.1	172	4.5	288	3.8	103	3.9	124	5.5	730	5.0	480
18,	7.15	1888	5.1	525	5.0	480	5.0	480	7.5	2195	4.6	322	4.1	172	6.35	1260	3.8	103	5.5	730	6.1	1090	5.0	480
19,	6.55	1408	6.4	1295	5.0	480	4.9	437	6.5	1370	4.5	288	4.1	172	10.1	4700	3.8	103	6.5	1370	12.35	6968	6.0	1025
20,	6.55	1408	6.5	1370	4.9	437	4.9	437	6.5	1370	4.5	288	4.3	226	7.0	1760	3.8	103	5.6	785	9.5	4100	9.6	4200
21,	8.65	3268	14.8	9540	6.1	1090	4.9	437	6.4	1295	4.5	288	5.4	675	5.5	730	3.8	103	4.9	437	6.85	1640	8.6	3220
22,	9.15	3750	12.0	6600	7.3	2015	4.8	396	6.0	1025	4.5	288	4.4	256	4.9	437	3.9	124	11.55	6150	5.9	960	8.8	3410
23,	12.4	7020	7.5	2195	7.6	2285	4.8	396	6.0	1025	4.5	288	4.1	172	4.6	322	4.15	185	9.0	3600	5.9	960	13.6	8280
24,	9.15	3750	6.5	1370	7.6	2285	5.0	480	6.6	1445	4.4	256	4.0	147	4.5	288	4.2	198	7.1	1845	6.3	1225	8.0	2650
25,	7.15	1888	6.3	1225	10.75	5350	5.3	625	6.7	1520	4.4	256	3.9	124	4.4	256	4.1	172	5.2	575	5.9	960	7.5	2195
26,	8.5	3125	5.7	840	8.5	3125	5.3	625	6.6	1445	4.4	256	3.9	124	4.3	226	3.9	124	5.2	575	5.4	675	6.1	1090
27,	8.0	2650	5.6	785	6.6	1445	5.0	480	6.3	1225	4.4	256	4.3	226	4.3	226	3.9	124	5.5	730	5.2	575	6.0	1025
28,	7.3	2015	5.4	675	6.6	1445	4.9	437	5.9	960	4.4	256	4.3	226	4.2	198	3.9	124	5.3	625	5.2	575	5.9	960
29,	6.5	1370	------	------	7.7	2375	4.9	437	5.8	900	4.4	256	4.3	226	4.1	172	3.9	124	5.1	525	5.3	625	5.5	730
30,	5.9	960	------	------	9.5	4100	4.8	396	5.7	840	4.4	256	4.2	198	4.1	172	3.8	103	5.1	525	5.7	840	5.5	730
31,	5.7	840	------	------	7.9	2555	------	------	5.6	785	------	------	4.0	147	4.0	147	------	------	6.0	1025	------	------	5.5	730

Note.—River frozen February 2-9, 1898.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MONOCACY RIVER, NEAR FREDERICK, MD.

1899. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.4	675	5.2	575	11.5	6100	7.1	1845	4.8	396	7.1	1845	4.1	172	3.9	124	4.3	226	4.0	147	7.3	2015	4.1	172
2,	5.0	480	5.2	575	10.1	4700	6.9	1680	4.8	396	11.1	5700	4.1	172	4.0	147	4.3	226	3.9	124	6.4	1295	4.1	172
3,	5.5	730	5.8	900	9.2	3800	6.5	1370	5.0	480	7.05	1802	4.1	172	5.1	525	5.4	675	3.9	124	6.3	1225	4.1	172
4,	6.0	1025	5.6	785	8.7	3315	6.1	1090	4.9	437	5.2	575	4.0	147	5.0	480	5.0	480	3.9	124	6.0	1025	4.1	172
5,	6.3	1225	5.9	960	17.2	12060	6.0	1025	4.9	437	4.9	437	4.0	147	5.0	480	4.5	288	3.8	103	5.3	625	4.1	172
6,	12.75	7388	5.7	840	11.45	6050	6.0	1025	4.8	396	4.7	358	4.5	288	4.9	437	4.0	147	3.8	103	5.0	480	4.0	147
7,	14.85	9592	5.5	730	8.9	3505	7.6	2285	4.8	396	4.5	288	4.4	256	4.5	288	3.9	124	3.9	124	4.5	288	4.0	147
8,	12.5	7125	5.4	675	7.8	2465	12.6	7230	5.2	575	4.5	288	4.2	198	4.0	147	3.8	103	3.9	124	4.4	256	3.9	124
9,	10.2	4800	6.0	1025	7.5	2195	7.8	2465	6.6	1445	5.5	730	4.3	226	4.0	147	3.7	85	4.1	172	4.3	226	3.9	124
10,	6.1	1090	6.0	1025	7.4	2105	6.9	1680	5.6	785	6.85	1640	4.2	198	4.0	147	4.0	147	4.1	172	4.3	226	3.9	124
11,	6.1	1090	6.0	1025	7.4	2195	6.5	1370	5.4	675	6.9	1680	4.2	198	4.0	147	4.0	147	4.0	147	4.2	198	3.9	124
12,	5.7	840	6.0	1025	7.3	2015	6.2	1155	5.8	900	6.5	1370	4.1	172	4.2	198	3.9	124	3.9	124	4.1	172	5.95	396
13,	5.8	900	6.0	1025	7.1	1845	5.9	960	5.4	675	5.2	575	4.3	226	4.0	147	3.9	124	4.0	147	4.1	172	4.8	992
14,	6.0	1025	6.0	1025	6.5	1370	5.6	785	5.0	480	4.9	437	4.2	198	3.9	124	3.8	103	3.9	124	4.1	172	5.5	730
15,	6.8	1600	6.0	1025	6.5	1370	5.6	785	5.0	480	6.2	1155	4.2	198	3.9	124	3.8	103	3.9	124	4.1	172	4.5	288
16,	6.6	1445	6.0	1025	9.7	4300	5.6	785	4.9	437	5.1	525	4.5	288	3.9	124	3.8	103	3.9	124	4.1	172	4.4	256
17,	6.6	1445	6.2	1155	6.9	1680	5.6	785	5.2	575	4.8	396	4.3	226	3.9	124	3.7	85	3.9	124	4.1	172	4.4	256
18,	7.1	1845	6.8	1600	7.9	2555	5.6	785	6.5	1370	4.5	288	4.3	226	3.8	103	3.7	85	4.0	147	4.1	172	4.3	226
19,	6.4	1295	7.9	2555	13.9	8595	5.6	785	7.7	2375	4.4	256	4.2	198	3.8	103	3.7	85	3.9	124	4.1	172	4.2	198
20,	5.6	785	9.0	3600	10.1	4700	5.4	675	6.9	1680	4.4	256	4.1	172	3.8	103	6.0	1025	3.9	124	4.1	172	4.2	198
21,	5.6	785	12.5	7125	7.9	2555	5.2	575	6.3	1225	4.4	256	4.0	147	3.8	103	5.3	625	3.8	103	4.1	172	4.5	288
22,	5.6	785	13.5	8175	7.8	2465	5.1	525	5.2	575	4.3	226	3.9	124	3.8	103	5.0	480	3.8	103	4.1	172	4.4	256
23,	5.6	785	15.65	10432	7.6	2285	5.1	525	5.2	575	4.3	226	3.9	124	3.8	103	4.9	437	3.8	103	4.1	172	4.3	226
24,	5.7	840	11.6	6200	7.2	1930	5.0	480	5.0	480	4.3	226	3.9	124	3.8	103	4.5	288	3.8	103	5.3	625	7.1	1845
25,	10.4	5000	9.1	3700	6.7	1520	5.0	480	4.9	437	4.2	198	4.3	226	3.8	103	4.3	226	3.8	103	4.7	358	6.9	1680
26,	8.2	2840	9.1	3700	6.7	1520	5.0	480	4.8	396	4.2	198	4.5	288	3.8	103	5.25	600	3.8	103	4.4	256	6.2	1155
27,	6.5	1370	17.8	12690	6.7	1520	5.0	480	4.7	358	4.2	198	4.4	256	4.7	358	5.5	730	3.8	103	4.3	226	6.0	1025
28,	5.2	575	12.5	7125	10.15	4750	4.9	437	4.7	358	4.2	198	4.3	226	4.95	458	5.3	625	3.8	103	4.3	226	5.1	525
29,	5.2	575	------	------	11.0	5600	4.9	437	4.6	322	4.2	198	4.2	198	4.7	358	5.0	480	3.8	103	4.3	226	5.1	525
30,	5.2	575	------	------	8.1	2745	4.8	396	5.0	480	4.2	198	4.0	147	4.3	226	4.5	288	3.8	103	4.2	198	5.1	525
31,	5.2	575	------	------	7.9	2555	------	------	5.0	480	------	------	3.9	124	4.3	226	------	------	5.0	480	------	------	5.4	675

Note.—River frozen at the gage January 2, February 9-21 and December 28-31, 1899.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MONOCACY RIVER, NEAR FREDERICK, MD

1900.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.4	675	5.1	525	13.45	8122	6.4	1295	4.7	358	4.4	256	4.0	147	3.95	136	3.85	114	3.9	124	3.7	85	5.2	575
2,	5.4	675	5.1	525	12.0	6000	5.7	840	4.7	358	4.4	256	4.0	147	3.85	114	3.75	94	3.8	103	3.7	85	4.3	226
3,	5.4	675	5.1	525	9.5	4100	5.5	730	4.7	358	4.4	256	3.9	124	3.85	114	3.75	94	3.8	103	3.7	85	4.3	226
4,	5.2	575	5.1	525	8.2	2840	5.5	730	4.9	437	4.4	256	3.9	124	3.75	94	3.6	69	3.8	103	4.1	172	7.2	1930
5,	5.0	480	5.2	575	7.3	2015	5.5	730	4.8	396	4.4	256	3.9	124	3.65	77	3.6	69	3.8	103	4.1	172	12.1	6705
6,	4.9	437	5.1	525	7.1	1845	5.4	675	4.6	322	4.3	226	3.9	124	3.65	77	3.65	77	3.7	85	4.0	147	6.0	1025
7,	4.8	396	5.3	625	8.0	2650	5.3	625	4.5	288	4.2	198	3.8	103	3.65	77	3.65	77	3.7	85	4.0	147	5.5	730
8,	4.5	288	6.9	1680	7.5	2195	5.2	575	4.4	256	4.2	198	3.8	103	3.65	77	3.65	77	3.7	85	4.0	147	5.2	575
9,	4.5	288	7.55	2240	6.5	1370	5.1	525	4.4	256	4.2	198	3.7	85	3.65	77	3.6	69	3.7	85	3.9	124	4.9	437
10,	4.9	437	6.9	1680	6.3	1225	5.1	525	4.4	256	4.1	172	3.7	85	3.65	77	3.6	69	3.7	85	3.9	124	4.5	288
11,	5.0	480	5.3	625	6.3	1225	5.0	480	4.4	256	4.1	172	3.7	85	3.55	62	3.55	62	3.7	85	3.9	124	4.3	226
12,	10.2	4800	5.5	730	5.9	960	5.0	480	4.4	256	4.1	172	3.7	85	3.55	62	3.55	62	3.7	85	3.9	124	4.2	198
13,	9.2	3800	15.1	9855	5.7	840	5.0	480	4.3	226	4.1	172	3.7	85	3.45	49	3.55	62	3.7	85	3.9	124	4.0	147
14,	5.4	675	12.85	7492	5.6	785	5.0	480	4.3	226	4.1	172	3.7	85	3.45	49	3.5	55	3.9	124	3.9	124	4.0	147
15,	4.9	437	7.0	1760	5.5	730	5.0	480	4.3	226	4.4	256	3.7	85	3.45	49	3.5	55	4.1	172	3.9	124	4.0	147
16,	4.8	396	6.5	1370	5.4	675	4.9	437	4.3	226	4.8	396	3.6	69	3.45	49	3.85	114	4.1	172	3.9	124	4.0	147
17,	4.6	322	5.9	960	5.4	675	4.9	437	4.3	226	5.0	480	3.6	69	3.55	62	3.85	114	4.1	172	3.9	124	4.0	147
18,	4.6	322	5.9	960	5.4	675	5.1	525	4.3	226	5.8	900	3.6	69	3.85	114	3.85	114	3.9	124	3.8	103	4.0	147
19,	4.9	437	5.8	900	5.4	675	5.2	575	6.5	1370	6.0	1025	3.7	85	3.75	94	3.8	103	3.8	103	3.8	103	3.9	124
20,	9.0	3600	5.5	730	13.5	8175	5.1	525	7.0	1760	5.1	525	4.55	305	3.75	94	3.8	103	3.7	85	3.8	103	3.9	124
21,	9.5	4100	5.5	730	10.2	4800	5.0	480	6.5	1370	4.9	437	4.55	305	3.75	94	3.8	103	3.7	85	3.8	103	3.9	124
22,	7.05	1802	20.8	15840	9.1	3700	5.0	480	5.9	960	4.5	288	3.75	94	4.75	94	3.7	85	3.7	85	3.8	103	4.0	147
23,	6.5	1370	15.0	9750	8.2	2840	5.5	730	4.9	437	4.4	256	4.05	160	4.65	340	3.65	77	3.8	103	3.9	124	4.0	147
24,	6.0	1025	10.5	5100	6.5	1370	5.6	785	4.8	396	4.2	198	5.45	702	4.05	160	3.5	55	3.8	103	3.9	124	4.1	172
25,	5.7	840	8.5	3125	6.1	1090	5.4	675	4.7	358	4.2	198	4.75	377	4.05	160	3.5	55	3.8	103	3.9	124	4.1	172
26,	5.5	730	7.1	1845	6.0	1025	4.9	437	4.6	322	4.2	198	4.15	185	3.95	136	3.5	55	3.7	85	9.2	3800	4.1	172
27,	5.1	525	6.5	1370	5.9	960	4.8	396	4.5	288	4.2	198	4.15	185	3.85	114	3.5	55	3.7	85	7.3	2015	4.1	172
28,	4.9	437	6.5	1370	5.7	840	4.8	396	4.5	288	4.1	172	4.05	160	5.45	702	3.6	69	3.7	85	7.1	1845	4.1	172
29,	4.6	322	------	------	5.5	730	4.8	396	4.5	288	4.1	172	3.95	136	5.25	600	------	------	3.7	85	6.9	1680	4.0	147
30,	4.5	288	------	------	5.5	730	4.7	358	4.5	288	4.0	147	3.95	136	4.25	212	4.0	147	3.7	85	6.3	1225	4.0	147
31,	4.5	288	------	------	6.5	1370	-----	------	4.5	288	-----	------	3.95	136	3.95	136	------	------	3.7	85	------	------	4.5	288

Note—River frozen at the gage January 1-6 and February 1-4, 1900.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MONOCACY RIVER, NEAR FREDERICK, MD.

1901.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.4	256	4.6	322	4.5	288	5.7	840	5.9	960	7.0	1025	4.3	226	4.1	172	4.3	226	5.2	575	4.2	198	4.9	437
2,	4.2	198	4.4	256	4.5	288	5.6	785	5.8	900	6.6	785	4.3	226	4.0	147	4.9	437	5.1	525	4.2	198	4.7	358
3,	4.2	198	4.4	256	4.4	256	18.0	12900	5.6	785	5.4	675	4.2	198	4.0	147	4.5	288	4.9	437	4.2	198	4.9	437
4,	4.3	226	4.4	256	5.0	480	15.5	10275	5.4	675	5.3	625	4.2	198	4.0	147	4.4	256	4.8	396	4.2	198	4.9	437
5.	4.3	226	4.8	396	5.5	730	10.5	5100	5.3	625	5.3	625	4.2	198	4.0	147	4.3	226	4.6	322	4.2	198	4.9	437
6.	4.2	198	4.8	396	5.3	625	7.9	2555	5.2	575	5.0	480	4.4	256	5.4	675	4.3	226	4.4	256	4.2	198	4.9	437
7,	4.1	172	4.7	358	5.0	480	8.3	2935	5.1	525	5.5	730	4.3	226	7.1	1845	4.3	226	4.3	226	4.2	198	4.8	396
8,	4.0	147	4.6	322	5.0	480	7.2	1930	5.1	525	7.1	1845	4.3	226	6.0	1025	4.3	226	4.3	226	4.3	226	4.8	396
9,	4.1	172	4.5	288	5.1	525	6.5	1370	5.1	525	5.4	675	4.2	198	4.7	358	4.3	226	4.2	198	4.3	226	4.8	396
10,	4.1	172	4.5	288	5.5	730	6.2	1155	5.5	730	5.2	575	4.1	172	4.6	322	4.2	198	4.2	198	4.3	226	7.5	2195
11,	5.5	730	4.5	288	20.5	15530	5.9	960	5.5	730	4.9	437	4.1	172	4.2	198	4.2	198	4.2	198	4.3	226	6.5	1370
12,	7.6	2285	4.5	288	11.9	6500	5.6	785	5.4	675	4.9	437	5.1	525	4.1	172	4.2	198	4.1	172	4.3	226	6.1	1090
13,	6.9	1680	4.4	256	8.0	2650	5.6	785	5.3	625	8.0	2650	5.5	730	4.0	322	4.2	198	4.1	172	4.3	226	5.3	625
14,	6.4	1295	4.3	226	7.3	2015	5.4	675	5.1	525	6.4	1295	4.8	396	4.4	256	4.2	198	4.8	396	4.3	226	5.4	675
15,	5.9	960	4.3	226	6.9	1680	6.9	1680	4.9	437	6.75	1560	4.8	396	4.3	226	4.2	198	5.0	480	4.3	226	19.75	14740
16,	4.9	437	4.3	226	6.1	1090	6.5	1370	4.9	437	7.45	2150	4.9	437	5.6	785	5.5	730	4.9	437	4.3	226	9.5	4100
17,	4.8	396	4.3	226	5.9	960	6.3	1225	4.9	437	7.2	1930	5.0	480	4.9	437	4.7	358	4.8	396	4.2	198	7.1	1845
18,	4.7	358	4.3	226	5.8	900	5.9	960	4.9	437	6.1	1090	4.9	437	5.1	525	4.5	288	4.4	256	4.2	198	6.9	1680
19,	4.7	358	4.4	256	5.6	785	5.5	730	4.85	416	5.9	960	5.2	575	4.5	288	4.5	288	4.2	198	4.2	198	6.5	1370
20,	4.5	288	4.9	437	5.3	625	9.6	4200	4.8	396	5.4	675	5.1	525	6.4	1295	4.4	256	4.2	198	4.2	198	6.2	1155
21,	4.3	226	5.0	480	10.5	5100	14.6	9330	4.8	396	5.2	575	5.1	525	6.1	1090	4.3	226	4.1	172	4.2	198	6.0	1025
22,	4.3	226	5.1	525	7.6	2285	9.6	4200	4.8	396	5.2	575	4.9	437	5.2	575	4.3	226	4.1	172	4.2	198	5.9	960
23,	4.2	198	5.0	480	7.1	1845	8.1	2745	11.3	5900	5.1	525	4.5	288	4.5	288	4.2	198	4.1	172	4.5	288	5.9	960
24,	4.2	198	5.0	480	6.0	1025	8.5	3125	9.1	3700	4.9	437	4.4	256	4.6	322	4.1	172	4.1	172	9.4	4000	5.7	840
25,	4.2	198	4.9	437	6.0	1025	7.9	2555	7.9	2555	4.7	358	4.2	198	5.0	480	4.1	172	4.1	172	7.5	2195	5.5	730
26,	4.3	226	4.8	396	6.1	1090	7.3	2015	7.1	1845	4.6	322	4.2	198	4.9	437	4.1	172	4.2	198	5.9	900	5.5	730
27,	4.3	226	4.6	322	13.55	822	6.9	1680	9.0	3600	4.5	288	4.5	288	4.5	288	4.1	172	4.2	198	5.5	730	7.35	2060
28,	4.3	226	4.5	288	10.4	5000	6.4	1295	9.2	3800	4.5	288	4.3	226	4.3	220	4.1	172	4.2	198	5.3	625	6.5	1370
29,	4.8	396	......	......	7.4	2705	6.1	1090	11.5	6100	4.5	288	4.2	198	4.2	198	4.7	358	4.2	198	5.1	525	13.25	7912
30,	4.7	358	......	......	5.9	960	6.0	1025	9.1	3700	4.5	288	4.2	198	4.2	198	6.7	1520	4.2	198	5.0	480	18.5	13425
31,	4.7	358	......	......	5.8	900	......	......	8.6	3220	......	......	4.1	172	4.2	198	......	......	4.2	198	......	......	12.5	7125

Note.– No gage weight on the wire from June 1-4, 1901; gage heights estimated by the observer.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MONOCACY RIVER, NEAR FREDERICK, MD.

1902.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	8.5	3125	5.9	960	25.2	20460	7.0	1760	5.2	575	4.3	226	6.9	1680	5.2	575	3.7	85	4.6	322	5.1	525	9.5	4100
2,	8.2	2840	5.9	960	14.5	9225	6.9	1680	5.1	525	4.3	226	6.4	1295	4.5	288	3.7	85	6.0	1025	5.0	480	7.9	2555
3,	7.1	1845	5.9	960	10.9	5500	10.5	5100	5.1	525	4.3	226	4.9	437	4.2	198	3.7	85	5.1	525	4.9	437	16.0	10800
4,	6.0	1025	8.5	3125	10.2	4800	8.5	3125	5.0	480	4.2	198	4.8	396	4.1	172	3.7	85	4.2	198	4.7	358	8.6	3220
5,	7.9	2555	8.5	3125	9.6	4200	8.3	2935	4.9	437	4.2	198	4.8	396	4.1	172	3.9	124	4.5	288	4.6	322	8.2	2840
6,	8.2	2840	8.1	2745	9.2	3800	8.0	2650	4.9	437	4.1	172	4.8	396	4.2	198	3.7	85	7.1	1845	4.5	288	7.9	2555
7,	8.1	2745	7.9	2555	9.1	3700	7.9	2555	4.8	396	4.1	172	4.8	396	4.2	198	3.6	69	5.2	575	4.4	256	7.8	2465
8,	7.5	2195	7.8	2465	8.9	3505	7.5	2195	4.8	396	4.1	172	4.6	322	4.1	172	3.6	69	5.1	525	4.6	322	7.8	2465
9,	5.9	960	7.4	2105	9.9	4500	17.9	12800	4.7	358	4.1	172	4.5	288	4.0	147	3.6	69	5.0	480	4.5	288	7.5	2195
10,	5.5	730	6.9	1680	15.2	9960	16.9	11745	4.7	358	4.1	172	4.4	256	4.0	147	3.6	69	4.9	437	4.5	288	7.4	2105
11,	5.4	675	6.5	1370	15.5	10275	8.2	2840	4.7	358	4.1	172	4.3	226	4.0	147	3.6	69	5.5	730	4.5	288	7.9	2555
12,	5.4	675	6.5	1370	12.2	6810	7.5	2195	4.6	322	4.0	147	4.2	198	4.0	147	3.55	62	12.8	7440	4.4	256	9.2	3800
13,	5.3	625	6.5	1370	14.5	9225	7.3	2015	4.6	322	7.1	1845	4.1	172	3.9	124	3.5	55	8.1	2745	4.4	256	11.5	6100
14,	5.3	625	6.3	1225	10.1	4700	6.9	1680	4.6	322	5.5	730	4.0	147	3.9	124	3.5	55	6.5	1370	4.4	256	9.5	4100
15,	5.2	575	6.1	1090	10.0	4600	6.5	1370	4.6	322	4.2	198	4.0	147	3.8	103	3.5	55	5.1	525	4.3	226	8.2	2840
16,	5.1	525	5.9	960	9.5	4100	6.3	1225	4.6	322	4.2	198	3.9	124	3.8	103	3.5	55	4.9	437	4.2	198	15.3	10065
17,	4.9	437	5.9	960	14.6	9330	6.1	1090	4.5	288	4.2	198	3.9	124	3.8	103	3.5	55	4.7	358	4.2	198	14.5	9225
18,	4.9	437	5.9	960	10.2	4800	5.9	960	4.5	288	4.1	172	3.9	124	3.8	103	3.5	55	4.6	322	4.2	198	8.5	3125
19,	4.9	437	5.9	960	8.4	3030	5.8	900	4.5	288	4.1	172	4.1	172	3.8	103	3.5	55	4.5	288	4.6	322	8.2	2840
20,	4.9	437	6.1	1090	8.1	2745	5.7	840	4.5	288	4.1	172	4.1	172	3.8	103	3.6	69	4.4	256	4.5	288	9.5	4100
21,	7.2	1930	10.2	4800	7.9	2555	5.6	785	4.5	288	4.2	198	5.2	575	3.7	85	3.6	69	4.3	226	4.4	256	10.5	5100
22,	18.05	12950	14.4	9120	7.4	2105	5.5	730	4.5	288	4.2	198	4.3	226	3.7	85	3.6	69	4.2	198	4.3	226	17.1	11960
23,	7.1	1845	9.6	4200	7.1	1845	5.4	675	4.5	288	4.1	172	4.2	198	3.7	85	3.5	55	4.2	198	4.2	198	14.2	8910
24,	6.9	1680	9.4	4000	6.9	1680	5.3	625	4.4	256	4.1	172	4.1	172	3.6	69	3.5	55	4.2	198	4.2	198	8.4	3030
25,	6.1	1090	10.5	5100	6.5	1370	5.3	625	4.4	256	4.1	172	4.1	172	3.6	69	3.8	103	4.1	172	4.2	198	7.5	2195
26,	6.9	1680	24.0	19200	6.3	1225	5.2	575	4.4	256	5.9	960	4.0	147	3.6	69	4.0	147	4.1	172	5.9	960	7.2	1930
27,	11.15	5750	21.4	16470	6.0	1025	5.1	525	4.5	288	5.6	785	4.0	147	3.6	69	9.1	3700	4.1	172	9.4	4000	6.9	1680
28,	7.5	2195	19.35	14318	6.0	1025	5.0	480	4.5	288	5.1	525	3.9	124	4.1	172	5.1	525	13.7	8385	7.9	2555	6.5	1370
29,	6.9	1680	-----	------	5.9	960	5.2	575	4.4	256	4.5	288	3.9	124	3.9	124	4.9	437	9.5	4100	5.9	960	6.4	1295
30,	6.5	1370	-----	------	5.6	785	5.2	575	4.3	226	4.5	288	4.5	288	3.7	85	4.8	396	5.5	730	5.9	960	6.2	1155
31,	6.2	1155	-----	------	6.2	1155	------	------	4.3	226	------	------	5.5	730	3.7	85	------	------	5.3	625	------	------	5.5	730

Note.—River frozen at gage February 4-19, 1902. Observer estimated gage heights March 20 to April 8, 1902, the gage being broken.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MONOCACY RIVER, NEAR FREDERICK, MD.

1903.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.5	730	7.6	2285	21.4	16470	7.9	2555	5.6	785	6.5	1370	9.5	4100	5.3	625	6.5	1370	4.4	256	4.3	226	4.3	226
2,	15.8	10590	7.3	2015	9.5	4100	7.4	2105	5.5	730	6.4	1295	8.1	2745	5.1	525	5.9	960	4.4	256	4.3	226	4.2	198
3,	13.35	8018	8.3	2925	8.1	2745	6.9	1680	5.5	730	6.1	1090	7.5	2195	4.9	437	5.5	730	4.3	226	4.3	226	4.2	198
4,	10.5	5100	16.35	11168	7.9	2555	7.9	2555	5.5	730	5.1	525	8.1	2745	4.9	437	5.4	675	4.3	226	4.3	226	4.2	198
5,	9.5	4100	10.5	5100	7.5	2195	7.2	1930	5.4	675	4.9	437	11.5	6100	4.9	437	5.2	575	4.3	226	4.3	226	4.1	172
6,	8.2	2840	7.9	2555	7.2	1930	6.5	1370	5.3	625	4.9	437	9.5	4100	4.9	437	5.0	480	4.3	226	4.3	226	4.1	172
7,	7.3	2015	7.5	2195	6.9	1680	6.9	1680	5.3	625	5.8	900	7.3	2015	5.4	675	4.9	437	4.4	256	4.3	226	4.6	322
8,	6.9	1680	7.3	2015	7.5	2195	7.5	2195	5.3	625	5.8	900	6.2	1155	5.2	575	4.8	396	5.2	575	4.3	226	4.2	198
9,	6.3	1225	7.5	2195	8.6	3220	12.2	6810	5.2	575	5.4	675	6.1	1090	5.1	525	5.4	675	7.2	1930	4.3	226	4.2	198
10,	6.9	1680	6.9	1680	7.4	2105	7.9	2555	5.1	525	5.1	525	5.9	960	4.9	437	7.2	1930	5.2	575	4.3	226	4.2	198
11,	9.6	4200	7.1	1845	7.2	1930	7.2	1930	5.0	480	5.8	900	5.8	900	4.9	437	6.9	1680	6.1	1090	4.3	226	4.2	198
12,	9.3	3900	10.5	5100	7.1	1845	6.7	1520	4.9	437	8.1	2745	9.15	3750	4.8	396	5.5	730	5.9	960	4.3	226	4.1	172
13,	8.6	3220	7.5	2195	6.3	1225	7.4	2105	4.9	437	6.5	1370	18.8	13740	4.8	396	4.9	437	5.6	785	4.3	226	4.1	172
14,	8.4	3030	7.3	2015	6.2	1155	19.3	14265	4.8	396	6.2	1155	8.5	3125	4.7	358	4.7	358	5.2	575	4.3	226	4.2	198
15,	8.2	2840	7.8	2465	6.2	1155	21.6	16680	4.8	396	5.8	900	7.5	2195	4.7	358	4.6	322	5.1	525	4.3	226	4.5	288
16,	8.2	2840	11.2	5800	6.2	1155	20.4	15420	4.7	358	5.4	675	6.8	1600	7.5	2195	4.6	322	4.9	437	4.3	226	4.6	322
17,	7.9	2555	7.9	2555	6.1	1090	11.4	6000	4.7	358	5.2	575	6.5	1370	7.1	1845	6.5	1370	4.9	437	4.4	256	4.8	396
18,	7.3	2015	7.4	2105	5.9	960	9.4	4000	4.8	396	5.6	785	8.2	2840	6.2	1155	11.1	5700	5.5	730	4.9	437	4.6	322
19,	7.3	2015	7.1	1845	5.9	960	8.4	3030	4.8	396	5.4	675	11.5	6100	5.9	960	5.8	900	5.4	675	4.7	358	4.2	198
20,	7.2	1930	6.9	1680	5.8	900	7.9	2555	4.7	358	6.65	1482	6.9	1680	5.7	840	5.2	575	5.2	575	4.5	288	6.5	1370
21,	8.55	3172	6.7	1520	5.8	900	7.4	2105	4.7	358	7.5	2195	6.4	1295	4.9	437	4.9	437	4.9	437	4.4	256	12.05	6652
22,	11.7	6300	6.4	1295	9.4	4000	7.1	1845	4.7	358	6.4	1295	6.2	1155	4.7	358	4.8	396	4.7	358	4.3	226	6.5	1370
23,	8.6	3220	6.2	1155	17.1	11960	6.7	1520	4.7	358	5.7	840	5.6	785	4.6	322	4.7	358	4.6	322	4.3	226	4.9	437
24,	7.1	1845	6.2	1155	18.2	13110	6.5	1370	6.5	1370	6.3	1225	5.4	675	4.5	288	4.7	358	4.6	322	4.3	226	4.8	396
25,	6.5	1370	6.2	1155	8.6	3220	6.4	1295	6.1	1090	5.9	960	5.3	625	4.5	288	4.6	322	4.5	288	4.3	226	4.7	358
26,	6.3	1225	6.2	1155	7.9	2555	6.2	1155	5.4	675	5.6	785	5.2	575	4.8	396	4.5	288	4.5	288	4.3	226	4.6	322
27,	6.1	1090	7.8	2015	7.5	2195	6.1	1090	4.9	437	5.6	785	5.2	575	4.7	358	4.5	288	4.4	256	4.3	226	4.5	288
28,	9.8	4400	21.2	16260	7.1	1845	5.9	960	4.9	437	5.6	785	5.1	525	10.5	5100	4.4	256	4.4	256	4.2	198	4.5	288
29,	10.6	5200	-----	-----	6.5	1370	5.7	840	4.8	396	21.2	16260	5.1	525	12.1	6705	4.4	256	4.4	256	4.2	198	4.6	322
30,	11.2	5800	-----	-----	9.5	4100	5.7	840	14.8	9540	14.9	9645	5.4	675	7.9	2555	4.4	256	4.3	226	4.2	198	4.5	288
31,	8.1	2745	-----	-----	13.9	8595	-----	-----	7.5	2195	-----	-----	5.4	675	7.4	2105	-----	-----	4.3	226	-----	-----	4.5	288

Note.—River frozen at gage January 12-20, 1903.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MONOCACY RIVER, NEAR FREDERICK, MD.

1904.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.6	294	5.0	450	8.1	2670	5.9	906	4.9	408	7.5	2130	4.5	260	4.2	170	3.8	80	4.0	120	4.0	120	4.0	120
2,	4.9	408	4.9	408	7.5	2130	7.2	1875	4.8	368	6.4	1242	4.3	198	4.9	408	3.8	80	4.0	120	4.0	120	4.0	120
3,	4.8	368	5.4	632	6.2	1102	6.4	1242	4.7	330	6.0	969	4.3	198	4.7	330	3.8	80	3.8	80	4.0	120	4.0	120
4,	5.5	682	4.9	408	6.2	1102	5.5	682	4.8	368	5.3	584	4.2	170	4.5	260	3.8	80	3.8	80	4.0	120	4.0	120
5,	5.1	493	4.6	294	5.9	906	5.4	632	4.7	330	7.4	2045	4.2	170	4.3	198	3.8	80	3.8	80	4.0	120	4.0	120
6,	4.9	408	4.7	330	6.0	969	5.5	682	4.8	368	7.0	1705	4.2	170	4.0	120	3.9	99	3.8	80	4.0	120	4.0	120
7,	4.7	330	8.2	2765	17.0	11750	5.4	632	4.7	330	6.8	1545	4.4	228	4.0	120	3.9	99	3.8	80	4.0	120	4.0	120
8,	4.6	294	14.15	8758	17.2	11960	5.6	734	5.0	450	6.7	789	6.2	1102	4.2	170	3.9	99	3.8	80	4.0	120	4.0	120
9,	4.6	294	6.4	1242	8.2	2765	7.8	2400	4.9	408	5.4	632	7.1	1790	4.5	260	3.9	99	3.8	80	4.0	120	4.0	120
10,	4.6	294	6.1	1034	6.5	1315	7.2	1875	5.7	789	5.2	538	8.2	2765	4.5	260	4.9	408	3.8	80	4.2	170	4.2	170
11	4.6	294	6.0	969	6.6	1390	6.4	1242	5.4	632	5.4	632	7.3	1960	12.6	7130	5.2	538	3.8	80	4.0	120	4.2	170
12,	4.6	294	5.4	632	7.0	1705	5.9	906	4.8	368	5.1	493	6.1	1034	5.6	734	4.9	408	3.8	80	4.0	120	4.2	170
13,	4.6	294	5.1	493	6.2	1102	5.6	734	4.7	330	5.0	450	7.4	2045	4.6	294	4.8	368	6.0	969	4.2	170	4.2	170
14,	4.6	294	4.9	408	5.9	906	5.4	632	4.8	368	4.7	330	6.4	1242	4.2	170	4.8	368	5.4	632	4.4	228	4.2	170
15,	4.6	294	4.9	408	5.8	846	5.1	493	5.0	450	4.6	294	5.2	538	4.2	170	4.7	330	4.8	368	4.4	228	4.2	170
16,	4.6	294	5.0	450	5.6	734	5.2	538	5.0	450	4.6	294	4.2	170	4.1	144	4.7	330	4.0	120	4.2	170	4.2	170
17,	4.5	260	4.9	408	5.5	682	5.0	450	4.8	368	4.5	260	4.1	144	4.1	144	4.6	294	4.0	120	4.2	170	4.2	170
18,	4.5	260	4.9	408	5.6	734	4.9	408	4.9	408	4.6	294	4.1	144	4.0	120	4.6	294	3.8	80	4.2	170	4.2	170
19,	4.5	260	4.9	408	5.5	682	4.9	408	5.2	538	4.5	260	4.1	144	4.0	120	4.6	294	3.8	80	4.2	170	4.2	170
20,	4.5	260	4.9	408	5.8	846	4.8	368	5.2	538	9.8	4300	4.0	120	4.2	170	5.6	734	3.8	80	4.2	170	4.2	170
21,	4.5	260	5.0	450	6.2	1102	4.8	368	4.9	408	7.4	2045	4.0	120	4.7	330	5.2	538	4.0	120	4.0	120	4.2	170
22,	4.5	260	13.75	8338	6.5	1315	4.6	294	4.8	368	5.9	906	4.0	120	4.7	330	4.9	408	5.0	450	4.0	120	4.2	170
23,	19.9	14800	12.2	6710	6.8	1545	4.6	294	4.6	294	4.9	408	4.0	120	4.6	294	4.6	294	4.6	294	4.0	120	4.2	170
24,	11.5	6000	9.0	3525	6.2	1102	4.7	330	4.6	294	4.5	260	5.1	493	4.5	260	4.4	228	4.4	228	4.0	120	4.4	228
25,	6.1	1034	6.8	1545	5.9	906	4.6	294	4.4	228	4.4	228	5.1	493	4.2	170	3.9	99	4.2	170	4.0	120	4.6	294
26,	5.9	906	5.2	538	5.7	789	4.8	368	4.5	260	4.3	198	5.1	493	4.2	170	4.0	120	4.0	120	4.0	120	5.4	632
27,	4.6	294	4.9	408	5.7	789	4.9	408	4.4	228	4.1	144	5.1	493	4.1	144	4.2	170	4.0	120	4.0	120	6.8	1545
28,	4.6	294	4.8	368	5.4	632	5.3	584	4.5	260	4.2	170	5.0	450	3.9	99	4.4	228	4.0	120	4.0	120	9.4	3905
29,	5.5	682	4.8	368	5.2	538	5.3	584	4.3	198	4.2	170	4.9	408	3.8	80	4.2	170	4.0	120	4.0	120	9.2	3715
30,	6.1	1034	------	------	5.2	538	5.1	493	4.4	228	4.3	198	4.4	228	3.8	80	4.0	120	4.0	120	4.0	120	7.8	2400
31,	5.9	906	------	------	5.4	632	------	------	4.5	260	------	------	4.2	170	3.8	80	------	------	4.0	120	------	------	5.8	846

Note.—River frozen at the gage January 4-22 and February 15-22, 1904.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MONOCACY RIVER, NEAR FREDERICK, MD.

1905. Day	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.0	969	5.2	538	5.8	846	6.0	969	4.8	368	4.6	294	4.5	260	5.7	789	5.0	450	4.2	170	4.7	330	8.1	2670
2,	6.4	1242	5.0	450	5.8	846	5.8	846	4.8	368	4.4	228	5.2	538	5.1	493	4.9	408	4.1	144	4.7	330	7.2	1875
3,	6.8	1545	5.0	450	5.4	632	5.6	734	4.8	368	4.4	228	4.9	408	4.9	408	7.5	2130	4.2	170	4.7	330	9.5	4000
4,	6.4	1242	4.8	368	5.2	538	5.4	632	4.6	294	4.4	228	4.6	294	4.7	330	6.4	1242	5.0	450	4.6	294	9.2	3715
5,	6.2	1102	4.8	368	6.6	1390	6.4	1242	4.6	294	4.2	170	4.5	260	4.6	294	6.1	1034	4.5	260	4.6	294	8.3	2860
6,	6.2	1102	4.8	368	6.8	1545	6.4	1242	4.6	294	4.2	170	8.0	2580	4.5	260	5.9	906	4.3	198	4.6	294	6.1	1034
7,	17.4	12170	4.8	368	7.4	2045	6.2	1102	4.6	294	4.6	294	7.9	2490	4.4	228	5.1	493	4.4	228	4.6	294	5.6	734
8,	9.8	4300	4.8	368	7.4	2045	5.8	846	4.6	294	7.4	2045	7.6	2220	4.5	260	5.1	493	4.2	170	4.5	260	5.5	682
9,	7.2	1875	4.8	368	10.9	5400	5.6	734	4.6	294	7.2	1875	6.5	1315	4.5	260	4.9	408	4.3	198	4.5	260	5.4	632
10,	6.8	1545	4.8	368	14.6	9230	5.4	632	4.6	294	5.6	734	5.6	734	4.5	260	4.8	368	4.3	198	4.4	228	5.3	584
11,	6.6	1390	4.8	368	11.8	6300	7.6	2220	4.4	228	4.4	228	4.9	408	4.5	260	4.9	408	4.4	228	4.4	228	5.1	493
12,	6.4	1242	4.8	368	9.8	4300	6.8	1545	4.4	228	4.9	408	4.9	408	4.5	260	7.2	1875	6.7	1465	4.4	228	5.0	450
13,	6.4	1242	4.8	368	9.0	3525	6.4	1242	4.4	228	8.3	2860	4.9	408	5.8	846	5.5	682	6.1	1034	4.4	228	5.0	450
14,	6.2	1102	4.8	368	8.8	3335	6.0	969	4.8	368	6.0	969	6.1	1034	6.1	1034	5.1	493	5.9	906	4.4	228	5.0	450
15,	5.8	846	4.8	368	8.2	2765	5.8	846	5.0	450	5.2	538	10.6	5100	5.5	682	4.9	408	5.3	584	4.3	198	4.9	408
16,	5.8	846	4.8	368	8.2	2765	5.6	734	4.8	368	4.8	368	7.9	2490	5.4	632	4.6	294	4.9	408	4.3	198	4.9	408
17,	6.0	969	4.8	368	9.0	3525	5.4	632	4.8	368	4.6	294	5.9	906	5.3	584	4.7	330	4.4	228	4.3	198	5.0	450
18,	6.2	1102	4.8	368	9.2	3715	5.4	632	4.8	368	4.4	228	4.9	408	4.6	294	5.1	493	4.4	228	4.3	198	5.0	450
19,	6.4	1242	4.8	368	8.6	3145	5.2	538	4.8	368	4.4	228	4.6	294	4.4	228	5.2	538	4.9	408	4.3	198	5.0	450
20,	6.4	1242	4.8	368	9.4	3905	5.2	538	4.6	294	4.4	228	4.6	294	4.5	260	5.1	493	7.4	2045	4.3	198	5.75	818
21,	5.8	846	4.8	368	14.8	9440	5.2	538	4.6	294	4.1	144	4.6	294	4.5	260	4.9	408	7.0	1705	4.3	198	18.65	13480
22,	5.6	734	4.8	368	10.4	4900	5.0	450	4.6	294	4.3	198	4.6	294	4.5	260	4.6	294	6.9	1625	4.3	198	12.6	7130
23,	5.4	632	4.8	368	8.8	3335	5.0	450	4.4	228	6.3	1172	5.9	906	4.4	228	4.6	294	6.1	1034	4.3	198	10.5	5000
24,	5.2	538	4.8	368	8.2	2765	5.0	450	4.4	228	7.4	2045	12.1	6605	4.4	228	4.5	260	5.1	493	4.3	198	7.5	2130
25,	5.4	632	4.8	368	8.0	2580	4.8	368	4.2	170	7.5	2130	7.9	2490	16.0	10700	4.4	228	4.7	330	4.3	198	6.9	1625
26,	6.2	1102	5.0	450	8.0	2580	4.8	368	4.2	170	6.9	1625	6.9	1625	18.8	13040	4.4	228	5.6	734	4.3	198	6.5	1315
27,	5.8	846	5.6	734	7.6	2220	4.8	368	4.2	170	6.5	1315	5.1	493	12.5	7025	4.3	198	5.7	789	4.3	198	5.9	906
28,	5.6	734	5.6	734	6.8	1545	5.8	846	4.2	170	5.1	493	4.9	408	6.4	1242	4.2	170	5.3	584	4.3	198	5.7	789
29,	5.6	734	----	----	6.4	1242	5.2	538	4.2	170	4.9	408	4.8	368	5.7	789	4.2	170	4.8	368	7.4	2045	10,65	5150
30,	5.6	734	----	----	6.4	1242	5.0	450	4.2	170	4.6	294	7.6	2220	5.4	632	4.2	170	4.8	368	8.5	3050	8.7	3240
31,	5.6	734	----	----	6.2	1102	----	----	4.2	170	----	----	6.9	1625	5.3	584	----	----	4.7	330	----	----	6.7	1465

Note.—From January 27 to February 28, the river was frozen entirely across except for a narrow channel in the middle. Gage heights are to the surface of the water through a hole in the ice. Thickness of ice about one foot.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MONOCACY RIVER, NEAR FREDERICK, MD.

1906.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.2	1102	4.9	408	5.3	584	9.7	4200	5.4	632	4.7	330	4.5	260	4.5	260	5.5	682	4.3	198	5.6	734	4.5	260
2,	5.7	789	4.8	368	5.5	682	7.8	2400	5.4	632	4.7	330	4.5	260	9.1	3620	5.2	538	4.3	198	5.5	682	4.5	260
3,	7.5	2130	4.5	260	9.1	3620	7.4	2945	5.3	584	4.6	294	4.5	260	16.1	10800	5.1	493	4.3	198	5.3	584	4.5	260
4,	18.35	13170	4.5	260	16.65	11382	6.9	1625	5.3	584	4.5	260	5.3	584	10.1	4600	4.9	408	4.8	368	5.2	538	4.5	260
5,	12.6	7130	5.1	493	9.1	3620	6.5	1315	5.2	538	4.4	228	5.1	493	5.5	682	4.9	408	7.1	1790	5.1	493	4.5	260
6,	7.6	2220	5.0	450	6.9	1625	6.3	1172	5.3	584	4.4	228	4.6	294	5.3	584	4.8	368	6.1	1034	5.0	450	4.7	330
7,	6.7	1465	4.9	408	6.5	1315	6.2	1102	5.3	584	4.4	228	4.6	294	5.1	493	4.7	330	5.8	846	4.9	408	4.8	368
8,	6.6	1390	4.8	368	6.4	1242	6.1	1034	5.3	584	4.4	228	4.5	260	4.9	408	4.6	294	4.9	408	4.8	368	4.8	368
9,	6.2	1102	5.2	538	6.3	1172	7.5	2130	5.2	538	4.4	228	4.5	260	4.8	368	4.6	294	4.7	330	4.8	368	4.7	330
10,	5.9	906	5.1	493	6.1	1034	16.8	11540	5.0	450	5.5	682	4.4	228	4.8	368	4.5	260	4.6	294	4.8	368	5.9	906
11,	5.7	789	5.0	450	5.9	906	9.1	3620	5.0	450	5.1	493	4.4	228	6.1	1034	4.4	228	4.5	260	4.8	368	6.8	1545
12,	6.9	1625	4.9	408	5.8	846	8.5	3050	4.9	408	4.5	260	4.9	408	5.1	493	4.4	228	4.4	228	4.7	330	6.4	1242
13,	6.7	1465	4.8	368	5.8	846	7.1	1790	4.9	408	4.5	260	4.5	260	6.1	1034	4.4	228	4.3	198	4.7	330	5.3	584
14,	6.2	1102	5.9	906	5.8	846	6.9	1625	4.9	408	4.4	228	4.4	228	4.8	368	4.4	228	4.3	198	4.7	330	5.2	538
15,	6.5	1315	8.1	2670	5.8	846	21.8	16790	4.7	330	4.4	228	4.4	228	4.7	330	4.4	228	4.3	198	4.8	368	5.2	538
16,	7.1	1790	5.4	632	5.8	846	15.5	10175	4.8	368	4.5	260	4.4	228	4.6	294	4.4	228	4.3	198	4.8	368	7.6	2220
17,	6.9	1625	4.9	408	5.7	789	10.2	4700	4.8	368	4.6	294	4.5	260	4.6	294	4.4	228	4.3	198	4.8	368	9.8	4300
18,	6.2	1102	4.8	368	5.7	789	8.1	2670	4.7	330	7.1	1790	4.5	260	4.5	260	4.4	228	4.3	198	4.9	408	12.1	6605
19,	5.9	906	5.0	450	5.6	734	7.5	2130	4.7	330	9.7	4200	4.4	228	8.5	3050	4.4	228	9.5	4000	5.2	538	8.5	3050
20,	5.7	789	5.0	450	5.6	734	7.1	1790	4.5	260	9.5	4000	4.4	228	7.5	2130	4.4	228	13.2	7760	5.5	682	6.5	1315
21,	5.7	789	5.4	632	5.5	682	6.7	1465	4.5	260	10.5	5000	4.3	198	6.5	1315	4.8	368	9.5	4000	5.1	493	9.5	4000
22,	5.7	789	9.4	3905	5.5	682	6.4	1242	4.5	260	10.7	5200	4.4	228	5.4	632	4.6	294	11.5	6000	5.0	450	7.5	2130
23,	5.6	734	6.5	1315	5.5	682	6.3	1172	4.5	260	6.7	1465	4.8	368	7.35	2002	4.4	228	8.5	3050	4.9	408	6.9	1625
24,	5.6	734	6.1	1034	5.6	734	6.1	1034	4.5	260	6.1	1034	5.1	493	6.5	1315	4.4	228	7.5	2130	4.8	368	5.8	846
25,	5.6	734	6.7	1465	5.6	734	5.9	906	4.4	228	5.9	906	4.8	368	7.5	2130	4.4	228	8.5	3050	4.7	330	5.7	789
26,	5.5	682	6.9	1625	5.5	682	.8	846	4.5	260	5.8	846	4.6	294	7.8	2400	4.3	198	8.1	2670	4.6	294	5.6	734
27,	5.5	682	5.9	906	9.0	3525	5.7	789	4.5	260	5.1	493	4.4	228	11.0	5500	4.3	198	7.5	2130	4.6	294	7.8	2400
28,	5.55	708	6.1	1034	17.45	12220	5.5	682	5.6	734	4.9	408	4.35	212	9.8	4300	4.3	198	6.7	1465	4.6	294	6.9	1625
29,	5.3	584	------	------	12.5	7025	5.4	632	5.1	493	4.8	368	4.5	260	7.5	2130	4.3	198	6.2	1102	4.5	260	5.8	846
30,	5.2	538	------	------	10.5	5000	5.4	332	4.8	368	4.7	330	4.3	198	6.1	1034	4.3	198	5.8	846	4.5	260	5.7	789
31,	5.1	493	------	------	9.6	4100	------	------	4.7	330	------	------	4.3	198	5.8	846	------	------	5.7	789	------	------	8.4	2955

Note.—River frozen at the gage February 6-9, 1906.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MONOCACY RIVER, NEAR FREDERICK, MD.

1907. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	12.2	6710	5.7	789	4.9	408	5.5	682	5.2	538	7.9	2490	9.5	4000	4.5	258	4.2	165	5.1	493	4.8	368	5.8	846
2,	9.5	4000	6.5	1315	6.7	1465	5.4	632	5.15	516	10.2	4700	7.6	2220	5.4	632	4.1	138	4.9	408	4.8	368	5.7	789
3,	7.4	2045	6.3	1172	13.7	8285	5.4	632	5.1	493	8.9	3430	6.5	1315	5.3	584	4.8	368	4.8	368	4.3	194	5.6	734
4,	6.9	1625	6.4	1242	10.5	5000	5.3	584	5.1	493	6.9	1625	5.9	906	4.9	408	4.6	293	4.8	368	6.4	1242	5.4	632
5,	6.5	1315	6.8	1545	9.2	3715	5.3	584	5.1	493	6.8	1545	5.3	584	4.5	258	4.5	258	4.8	368	5.6	734	5.3	584
6,	6.4	1242	6.8	1545	9.1	3620	5.2	538	5.0	450	6.4	1242	5.0	450	4.5	258	4.4	225	4.8	368	5.5	682	5.2	538
7,	5.9	906	6.8	958	8.9	3430	5.3	584	5.0	450	5.6	734	9.5	4000	4.5	258	4.2	165	4.7	330	5.3	584	5.2	538
8,	5.6	734	6.7	958	6.2	1102	6.3	1172	5.2	538	5.4	632	6.5	1315	4.5	258	4.2	165	4.7	330	5.2	538	5.2	538
9,	7.5	2130	6.4	958	7.1	1790	9.3	3810	6.1	1034	5.3	584	5.5	682	6.2	1102	4.2	165	4.7	330	5.2	538	5.3	584
10,	6.9	1625	5.9	958	6.9	1625	8.2	2765	7.9	2490	5.3	584	5.3	584	5.5	682	4.2	165	4.6	293	6.4	1242	16.5	11225
11,	6.0	969	5.8	958	6.2	1102	7.5	2130	7.2	1875	7.4	2045	5.3	584	5.4	632	5.0	450	4.6	293	6.1	1034	14.5	9125
12,	6.5	1315	5.7	789	7.4	2045	6.1	1034	6.5	1315	6.8	1545	15.9	10595	4.9	408	5.5	682	4.6	293	5.9	906	10.4	4900
13,	10.6	5100	5.4	632	12.0	6500	5.9	906	5.6	734	6.4	1242	9.15	3670	4.5	258	4.9	408	4.6	293	5.6	734	7.1	1790
14,	8.9	3430	5.4	632	17.6	12380	5.8	846	5.4	632	6.4	1242	7.2	1875	4.4	225	4.6	293	4.5	258	5.2	538	9.5	4000
15,	8.7	3240	5.3	584	11.3	5800	5.7	789	5.3	584	6.4	1242	6.9	1625	4.3	194	4.2	165	4.5	258	5.2	538	11.1	5600
16,	9.7	4200	5.3	584	10.5	5000	5.5	682	5.3	584	5.9	906	5.8	846	4.3	194	4.2	165	4.5	258	5.1	493	9.1	3620
17,	9.2	3715	5.5	682	9.5	4000	5.4	632	5.2	538	5.6	734	5.7	789	4.2	165	4.2	165	4.4	225	5.1	493	8.9	3430
18,	8.3	2860	5.7	789	12.0	6500	5.3	584	5.2	538	5.4	632	5.7	789	4.3	194	6.9	1625	4.4	225	5.1	493	7.6	2220
19,	7.6	2220	5.6	734	10.5	5000	5.3	584	5.2	538	5.3	584	7.9	2490	4.2	165	5.1	493	4.4	225	8.5	3050	7.3	1960
20,	15.0	9650	5.5	682	9.5	4000	5.2	538	5.2	538	5.3	584	5.9	906	4.2	165	5.0	450	4.4	225	7.9	2490	6.9	1625
21,	14.2	8810	5.4	632	9.1	3620	5.2	538	5.1	493	9.5	4000	5.3	584	4.2	165	5.0	450	4.4	225	6.5	1315	6.4	1242
22,	10.4	4900	5.3	584	8.5	3050	5.2	538	5.1	493	6.2	1102	5.2	538	4.3	194	4.5	258	4.35	210	7.4	2045	6.1	1034
23,	8.5	3050	5.3	584	7.9	2490	5.4	632	4.9	408	5.6	734	5.1	493	4.3	194	11.1	5600	4.3	194	8.1	2670	13.4	7970
24,	6.9	1625	5.3	584	7.1	1790	7.1	1790	4.9	408	5.2	538	4.9	408	6.1	1034	11.9	6400	4.3	194	9.1	3620	10.2	4700
25,	6.3	1172	5.3	584	6.6	1390	7.1	1790	5.1	493	5.0	450	4.7	330	5.9	906	6.9	1625	4.3	194	13.9	8495	9.3	3810
26,	6.2	1102	5.1	493	6.2	1102	5.6	734	5.1	493	4.9	408	4.7	330	5.7	789	6.4	1242	4.3	194	10.5	5000	8.5	3050
27,	5.7	789	5.0	450	5.9	906	5.4	632	5.9	906	4.7	330	4.7	330	4.7	330	5.5	682	4.3	194	7.5	2130	7.9	2490
28,	5.5	682	4.9	408	5.8	846	5.3	584	5.7	789	4.7	330	4.6	293	4.3	194	4.9	408	4.5	258	6.6	1390	7.1	1790
29,	5.5	682	-----	-----	5.8	846	5.2	538	5.4	632	7.5	2130	4.6	293	4.3	194	5.6	734	6.5	1315	6.4	1242	7.1	1790
30,	5.5	682	-----	-----	5.7	789	5.2	538	4.9	408	10.1	4600	4.6	293	4.2	165	5.2	538	5.5	682	6.1	1034	7.1	1790
31,	5.6	734	-----	-----	5.6	734	-----	-----	4.8	368	-----	-----	4.5	258	4.2	165	-----	-----	4.8	368	-----	-----	7.5	2130

Note.—Ice conditions prevailed from about February 7 to 11, 1907, discharge for this period estimated, 958 second-feet. (See "Estimated Monthly Discharge" for 1907.)

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MONOCACY RIVER, NEAR FREDERICK, MD.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.9	1625	5.6	734	7.0	1705	7.4	2045	4.9	408	5.9	906	4.4	225	4.45	242	4.25	180	4.45	242	4.25	180	4.05	126
2,	6.5	1315	5.6	734	8.9	3430	6.3	1172	4.9	408	5.5	682	4.4	225	4.35	210	4.15	152	4.35	210	4.15	152	4.05	126
3,	6.1	1034	5.5	682	8.6	3145	6.2	1102	4.9	408	5.4	632	4.4	225	4.35	180	4.15	152	4.25	180	4.15	152	4.05	126
4,	6.1	1034	5.5	682	8.7	3240	5.9	906	4.9	408	5.3	584	4.4	225	4.25	180	4.05	126	4.15	152	4.15	152	4.05	126
5,	6.1	1034	5.5	682	8.5	3050	5.8	846	5.1	493	5.2	538	4.7	330	4.25	180	4.05	126	4.05	126	4.05	126	4.05	126
6,	5.8	846	5.5	682	12.2	6710	5.8	846	5.7	789	5.1	493	4.6	293	4.25	180	4.15	152	4.05	126	4.05	126	4.05	126
7,	5.9	906	5.4	632	11.6	6100	5.8	846	17.8	12590	5.1	493	4.3	194	4.85	388	4.15	152	4.05	126	4.05	126	4.15	152
8,	9.6	4100	5.3	584	11.5	6000	5.8	846	19.0	13850	5.1	493	4.3	194	4.65	312	4.15	152	4.05	126	4.15	152	4.35	210
9,	9.4	3905	5.2	538	10.6	5100	7.1	1750	8.7	3240	5.1	493	4.3	194	4.85	388	4.15	152	4.05	126	4.15	152	4.35	210
10,	9.1	3620	5.2	538	9.6	4100	6.9	1625	7.5	2130	5.0	450	4.3	194	4.45	242	4.05	126	4.05	126	4.15	152	4.25	180
11,	8.9	3430	5.1	493	8.9	3430	5.9	906	7.1	1790	4.9	408	4.2	165	4.45	242	4.05	126	4.55	276	4.05	126	4.25	180
12,	14.9	9540	5.1	493	7.9	2490	5.7	789	6.2	1102	4.9	408	4.2	165	4.45	242	4.05	126	5.65	762	4.05	126	4.25	180
13,	14.8	9440	5.8	846	7.4	2045	5.6	734	6.1	1034	4.7	330	4.2	165	4.25	180	4.05	126	5.15	516	4.05	126	4.25	180
14,	10.2	4700	8.5	3050	7.1	1790	5.5	682	6.1	1034	4.6	293	4.2	165	4.15	152	4.05	126	5.05	472	4.05	126	4.35	210
15,	7.9	2490	19.6	14480	6.9	1625	5.7	789	6.1	1034	4.6	293	4.2	165	4.15	152	4.05	126	4.25	180	4.05	126	4.35	210
16,	6.7	1465	24.1	19200	6.7	1465	5.6	734	6.1	1034	5.5	682	4.2	165	4.15	152	3.95	102	4.05	126	4.05	126	4.35	210
17,	6.6	1390	8.9	3430	6.5	1315	5.6	734	5.9	906	4.9	408	4.2	165	5.15	516	3.95	102	4.05	126	4.15	152	4.35	210
18,	6.4	1242	7.9	2490	6.2	1102	5.5	682	5.8	846	4.8	368	4.2	165	6.45	1280	3.95	102	4.05	126	4.15	152	4.95	429
19,	6.3	1172	6.5	1315	8.4	2955	5.5	682	9.05	3570	4.8	368	4.2	165	5.05	472	3.95	102	4.05	126	4.25	180	5.05	472
20,	6.2	1102	6.3	1172	8.2	2765	5.5	682	22.3	17300	4.7	330	4.1	138	4.45	242	3.95	102	4.05	126	4.25	180	4.85	388
21,	6.2	1102	6.1	1034	6.5	1315	5.5	682	18.9	13745	4.6	293	4.1	138	4.35	210	3.95	102	4.05	126	4.25	180	4.75	349
22,	6.1	1034	6.0	969	6.5	1315	5.4	632	15.2	9860	4.6	293	7.2	1875	4.15	152	3.95	102	4.05	126	4.25	180	4.45	242
23,	6.1	1034	5.9	906	6.4	1242	5.1	493	19.6	14480	4.6	293	6.9	1625	4.15	152	3.95	102	4.05	126	4.25	180	4.25	180
24,	6.1	1034	5.8	846	6.4	1242	5.1	493	12.5	7025	4.6	293	6.4	1242	4.15	152	3.95	102	4.15	152	4.25	180	4.25	180
25,	6.2	1102	5.7	789	5.9	906	5.0	450	8.7	3240	4.5	258	9.7	4200	4.15	152	3.95	102	5.15	516	4.25	180	4.35	210
26,	6.2	1102	18.4	13220	5.7	789	5.0	450	7.0	1705	4.5	258	8.5	3050	6.45	1280	3.95	102	5.15	516	4.25	180	4.35	210
27,	6.2	1102	23.5	18575	5.6	734	5.0	450	6.6	1390	4.4	225	5.5	682	5.85	876	3.95	102	4.85	388	4.25	180	4.45	242
28,	5.9	906	12.5	7025	5.5	682	5.0	450	6.3	1172	4.4	225	5.3	584	5.05	472	3.95	102	4.65	312	4.25	180	4.45	242
29,	5.8	846	7.1	1790	6.1	1034	4.9	408	6.2	1102	4.4	225	4.9	408	4.85	388	6.45	1280	4.45	242	4.15	152	4.35	210
30,	5.7	789	------	------	6.4	1242	4.9	408	6.1	1034	4.4	225	4.7	330	4.35	210	5.85	876	4.35	210	4.15	152	4.25	180
31,	5.6	734	------	------	7.9	2490	------	------	6.0	969	------	------	4.6	293	4.35	210	------	------	4.25	180	------	------	4.15	152

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MONOCACY RIVER, NEAR FREDERICK, MD.

1910	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.15	140	5.35	608	6.35	1210	5.25	560	5.75	818	4.7	320	4.7	320	3.9	79	3.7	38	3.8	57	3.9	79	3.9	79
2,	4.65	301	5.05	468	6.45	1280	5.25	560	5.55	708	4.6	282	4.5	247	4.0	102	3.7	38	3.8	57	3.9	79	3.9	79
3,	4.35	198	4.85	381	9.45	3950	5.25	560	5.45	657	4.5	247	4.5	247	4.0	102	3.7	38	3.75	48	3.9	79	3.9	79
4,	4.35	198	4.85	381	12.45	6970	5.15	514	5.35	608	5.1	491	4.5	247	3.9	79	3.7	38	3.7	38	3.8	57	3.9	79
5,	4.45	240	4.85	381	8.45	3000	5.15	514	5.25	560	6.4	1240	4.4	214	3.9	79	3.8	57	3.7	38	3.8	57	3.9	79
6,	5.55	708	4.75	340	7.85	2440	5.15	514	5.15	514	8.4	2960	4.4	214	3.9	79	3.7	38	3.7	38	3.8	57	3.9	79
7,	5.45	657	4.75	340	7.15	1830	5.05	468	5.05	468	7.8	2400	4.3	183	3.9	79	3.7	38	3.8	57	3.8	57	3.9	79
8,	4.55	264	5.05	468	7.05	1750	4.95	424	5.25	560	5.4	632	4.3	183	3.9	79	3.7	38	3.8	57	3.8	57	4.0	102
9,	4.45	240	5.15	514	8.55	3100	4.95	424	5.05	468	7.4	2040	4.2	154	3.8	57	3.7	38	3.8	57	4.1	127	4.0	102
10,	4.45	240	12.2	6710	8.35	2910	4.85	381	4.95	424	7.8	2400	4.2	154	3.8	57	4.9	402	3.75	48	4.0	102	4.0	102
11,	4.55	264	13.45	8020	7.75	2360	4.85	381	5.05	468	7.1	1790	4.2	154	3.8	57	4.5	247	3.8	57	4.0	102	4.0	102
12,	4.45	240	6.65	1430	6.75	1500	4.75	340	4.95	424	6.0	969	4.2	154	3.8	57	4.2	154	4.6	282	3.9	79	4.0	102
13,	4.45	240	6.35	1210	6.75	1500	4.75	340	4.85	381	5.8	846	4.2	154	3.8	57	4.1	127	4.5	247	3.9	79	7.2	1880
14,	4.45	240	6.05	1000	6.75	1500	8.05	2620	4.75	340	5.7	789	4.2	154	3.8	57	3.9	79	4.2	154	3.9	79	14.5	9120
15,	4.55	264	8.35	2910	6.75	1500	8.95	3180	4.65	301	5.6	734	4.2	154	3.8	57	3.9	79	4.1	127	3.9	79	9.6	4100
16,	4.55	264	7.35	2000	6.65	1430	6.45	1280	4.55	264	5.4	632	4.2	154	3.9	79	4.4	214	4.0	102	3.9	79	7.5	2130
17.	6.35	1210	9.35	3860	6.35	1210	6.05	1060	4.55	264	5.1	491	4.15	140	5.2	537	4.2	154	3.9	79	3.9	79	4.5	247
18,	6.25	1140	6.45	1280	5.85	876	5.75	818	4.55	264	8.1	2670	4.1	127	5.1	491	4.1	127	3.9	79	3.9	79	4.4	214
19,	5.85	700	6.45	1280	5.75	818	5.55	708	4.45	240	7.4	2040	4.0	102	4.1	127	3.95	90	3.8	57	3.9	79	4.2	154
20,	5.15	500	12.45	6970	5.55	708	7.55	2180	4.45	240	5.1	491	4.0	102	4.1	127	3.95	90	3.8	57	3.9	79	4.3	183
21,	4.85	381	7.45	2090	5.45	657	10.35	4850	4.85	381	5.1	491	4.0	102	4.0	102	3.9	79	3.8	57	3.9	79	4.5	247
22,	4.65	301	7.45	2090	5.35	608	8.55	3100	5.85	876	4.8	360	4.0	102	3.9	79	3.9	79	3.9	79	3.9	79	4.3	183
23,	4.65	301	9.05	3570	5.25	560	8.05	2620	5.15	514	4.7	320	4.0	102	3.8	57	3.85	68	3.9	79	4.0	102	4.2	130
24,	5.45	657	15.85	10500	5.25	560	9.25	3700	5.05	468	4.6	282	4.1	127	3.8	57	4.05	114	3.9	79	4.0	102	4.1	100
25,	8.45	3000	12.45	6970	6.40	1240	8.45	3000	4.85	381	4.6	282	4.1	127	3.8	57	3.85	68	4.1	127	4.0	102	4.1	100
26,	8.85	3380	7.45	2090	8.15	2720	6.45	1280	4.75	340	4.6	282	4.0	102	3.8	57	3.85	68	4.0	102	3.9	79	4.1	100
27,	6.65	1430	7.25	1920	7.15	1830	6.25	1140	7.45	2090	5.4	632	3.9	79	3.8	57	3.85	68	3.9	79	3.9	79	4.2	120
28,	6.05	1000	7.15	1830	6.05	1000	6.05	1000	4.65	301	6.8	1540	4.0	102	3.8	57	3.75	48	3.9	79	3.9	79	4.2	120
29,	6.05	1000	------	------	5.85	876	5.95	938	7.25	1920	5.0	446	3.9	79	3.7	38	3.75	48	3.9	79	3.9	79	4.2	120
30,	5.85	876	------	------	5.35	608	5.85	876	5.85	876	4.8	360	3.9	79	3.7	38	3.8	57	3.9	79	3.9	79	4.2	120
31,	5.75	818	------	------	5.25	560	------	------	4.85	381	------	------	3.9	79	3.7	38	------	------	3.9	79	------	------	4.3	150

Note.—Ice conditions January 19 and 20, and December 23 to 31. Frozen a long banks and below bridge during the latter half of December. The discharges are based on a rating curve that is fairly well defined between 57 and 4,500 second-feet. Discharge estimated January 19 and 20, and December 23 to 31, because of ice conditions.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MONOCACY RIVER, NEAR FREDERICK, MD.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.3	150	4.9	402	12.9	7440	4.3	183	6.1	1030	4.4	214	4.6	282	3.9	79	3.7	38	3.7	38	3.8	57	4.0	102
2,	4.3	150	4.5	247	9.1	3620	4.4	214	5.7	789	4.3	183	4.5	247	4.0	102	3.8	57	3.6	22	3.9	79	4.0	102
3,	4.3	150	4.6	282	8.5	3050	4.4	214	5.4	632	4.4	214	4.6	282	3.9	79	4.4	214	3.6	22	3.8	57	4.0	102
4,	4.3	150	4.6	282	7.0	1700	4.5	247	5.4	632	5.0	446	4.5	247	3.9	79	4.2	154	3.5	15	4.0	102	4.1	127
5,	4.3	150	4.6	282	6.5	1320	4.7	320	5.2	537	4.9	402	4.6	282	3.8	57	4.0	102	3.6	22	3.9	79	4.0	102
6,	4.5	200	5.4	632	6.1	1030	4.6	282	5.1	491	4.8	360	4.5	247	3.9	79	4.1	127	3.5	15	4.0	102	4.3	183
7,	5.25	560	5.1	491	6.1	1030	4.4	214	4.9	402	4.7	320	4.4	214	3.8	57	3.9	79	3.5	15	4.1	127	4.2	154
8,	7.8	2400	5.2	537	5.7	789	4.5	247	5.0	446	4.7	320	4.4	214	3.9	79	4.0	102	3.6	22	3.9	79	4.3	183
9,	5.5	682	5.4	632	5.4	632	4.4	214	5.1	491	4.8	360	4.3	183	3.8	57	3.9	79	3.5	15	4.0	102	4.1	127
10,	5.3	584	5.4	632	5.3	584	4.3	183	5.0	446	5.6	734	4.4	214	3.9	79	3.9	79	3.6	22	3.9	79	4.1	127
11,	5.2	537	5.4	632	5.3	584	4.3	183	4.8	360	7.85	2440	4.4	214	3.8	57	3.6	22	3.8	57	3.9	79	4.0	102
12,	4.9	402	5.3	584	5.3	584	4.3	183	4.9	402	7.45	2090	4.3	183	3.9	79	3.7	38	3.7	38	4.0	102	4.1	127
13,	4.9	402	5.4	632	5.1	491	4.1	127	4.7	320	7.5	2130	5.7	789	3.8	57	3.6	22	3.8	57	3.9	79	4.0	102
14,	4.8	360	5.2	537	5.1	491	4.2	154	4.8	360	6.8	1540	5.5	682	3.9	79	3.7	38	3.7	38	4.0	102	4.0	102
15,	4.8	360	4.8	360	5.0	446	4.2	154	4.7	320	5.9	906	5.2	537	5.5	682	3.7	38	3.7	38	3.8	57	4.0	102
16,	4.9	402	4.9	402	4.8	360	4.1	127	4.6	282	6.2	1100	4.3	183	6.8	1540	3.8	57	3.6	22	3.8	57	4.0	102
17,	4.8	360	13.4	7970	4.8	360	4.5	247	4.7	320	13.2	7760	4.2	154	5.8	846	3.7	38	3.6	22	3.8	57	3.9	79
18,	5.8	846	15.55	10200	4.7	320	8.0	2580	4.7	320	8.7	3240	4.8	360	4.1	127	3.8	57	3.7	38	3.9	79	4.0	102
19,	13.05	8230	7.6	2220	4.6	282	6.95	1600	4.6	282	6.8	1540	4.5	247	4.0	102	3.8	57	3.7	38	3.7	38	3.9	79
20,	9.3	3810	8.6	3140	4.7	320	6.2	1100	4.6	282	6.8	1540	4.5	247	4.1	127	3.8	57	3.8	57	3.7	38	3.9	79
21,	15.5	10200	11.6	6100	4.7	320	6.0	969	4.6	282	6.4	1240	4.3	183	4.0	102	3.6	22	3.7	38	3.8	57	3.9	79
22,	17.8	12600	13.1	7660	4.7	320	5.9	906	4.6	282	6.0	969	4.2	154	4.0	102	3.7	38	3.9	79	3.7	38	4.1	127
23,	8.2	2760	12.1	6600	4.7	320	6.0	969	4.6	282	6.0	969	4.2	154	3.9	79	3.6	22	4.0	102	3.9	79	4.0	102
24,	7.05	1750	8.5	3050	4.6	282	8.7	3940	4.6	282	5.3	584	4.1	127	4.0	102	3.7	38	4.0	102	3.8	57	4.1	127
25,	6.4	1240	6.8	1540	4.6	282	15.3	9960	4.5	247	5.0	446	4.1	127	3.9	79	3.6	22	4.0	102	3.8	57	4.0	102
26,	5.4	632	6.3	1170	4.6	282	9.9	1400	4.7	320	4.9	402	4.0	102	3.9	79	3.7	38	3.9	79	3.9	79	4.0	102
27,	5.3	584	5.9	906	4.5	247	8.2	2760	4.7	320	4.8	360	3.9	79	3.7	38	3.6	22	3.9	79	3.8	57	4.1	127
28,	5.2	537	8.9	3430	4.5	247	7.0	1700	4.4	214	4.9	402	4.0	102	3.8	57	3.7	38	4.0	102	3.9	79	4.2	154
29,	5.2	537	------	------	4.4	214	6.5	1380	4.5	247	4.8	360	3.9	79	3.7	38	3.6	22	3.9	79	4.2	154	4.1	127
30,	5.0	446	------	------	4.5	247	6.4	1240	4.4	214	4.7	320	4.0	102	3.8	57	3.7	38	4.0	102	4.1	127	4.5	247
31,	5.0	446	------	------	4.45	230	------	------	4.3	183	------	------	4.0	102	3.8	57	------	------	3.8	57	------	------	4.8	360

Note.—Relation of gage height to discharge more or less affected from January 1 to 18. Probably no appreciable backwater from ice during the remainder of the year. **All gage readings probably to water surface. Daily discharge** determined from a fairly well-defined discharge rating table. Discharge January 1 to 6, slightly reduced on account of effect of ice. No further corrections made to daily discharge.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MONOCACY RIVER, NEAR FREDERICK, MD.

1911. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.7	320	5.3	584	5.3	584	5.6	734	5.2	537	4.4	214	4.2	154	3.7	38	20.3	15200	5.4	632	4.8	360	5.31	584
2,	5.7	789	5.2	537	5.2	537	5.4	632	5.7	789	4.4	214	4.1	127	4.3	183	8.0	3140	5.0	446	4.8	360	5.2	537
3,	6.3	1170	5.3	584	4.9	402	4.9	402	5.3	584	4.4	214	4.0	102	5.0	446	6.8	1540	4.9	402	4.8	360	5.1	491
4,	6.0	969	5.5	682	5.0	446	6.8	1540	5.0	446	4.4	214	3.9	79	5.6	734	6.4	1240	4.8	360	4.8	360	5.1	491
5,	5.9	906	5.4	632	4.9	402	9.15	3670	5.0	446	4.4	214	3.8	57	5.4	632	6.2	1100	4.5	247	4.7	320	5.0	446
6,	5.7	789	5.4	632	4.8	360	7.0	1700	4.9	402	5.3	584	3.8	57	5.2	537	6.0	969	4.6	282	6.7	1460	5.0	446
7,	5.2	537	5.4	632	4.8	360	6.5	1320	4.8	360	5.4	632	3.7	38	4.9	402	5.3	584	4.5	247	8.4	2960	4.9	402
8,	4.4	214	5.4	632	4.9	402	6.3	1170	4.8	360	4.9	402	4.6	282	4.4	214	4.8	368	4.4	214	6.4	1240	4.9	402
9,	4.4	214	5.2	537	4.8	360	6.1	1030	4.7	320	4.5	247	4.8	360	4.0	102	4.3	183	4.1	127	5.6	734	4.9	402
10,	4.5	247	4.8	360	6.3	1170	5.9	906	4.7	320	4.5	247	4.4	214	3.9	79	4.2	154	3.9	79	5.3	584	4.9	402
11,	4.4	214	4.6	282	7.2	1880	5.6	734	4.8	360	4.4	214	4.1	127	4.0	102	5.4	632	4.0	102	5.2	537	4.8	360
12,	4.8	360	4.8	360	5.6	734	5.3	584	4.6	282	4.4	214	4.1	127	3.9	79	4.1	127	4.4	214	5.2	537	4.8	360
13,	5.2	537	6.3	1170	5.3	584	5.2	537	4.5	247	4.6	282	4.1	127	3.8	57	5.0	446	4.4	214	6.8	1540	4.8	360
14,	5.0	446	6.3	1170	5.4	632	5.2	537	4.5	247	4.5	247	4.1	127	3.8	57	4.8	368	4.3	183	6.3	1170	4.8	360
15,	5.0	446	6.3	1170	5.5	682	5.7	789	4.4	214	4.4	214	4.0	102	3.9	79	5.4	632	4.2	154	5.8	846	5.3	584
16,	5.2	537	6.1	1030	7.1	1790	5.4	632	4.5	247	4.4	214	4.0	102	3.9	79	7.4	2040	4.3	183	5.8	846	6.4	1240
17,	4.9	402	5.9	906	6.8	1540	5.1	491	4.4	214	4.4	214	4.9	402	3.9	79	6.4	1240	4.3	183	5.6	734	8.5	3050
18,	4.5	247	6.55	1350	6.3	1170	5.0	446	4.4	214	4.4	214	4.9	402	4.0	102	5.8	846	7.8	2400	6.1	1030	6.4	1240
19,	4.4	214	6.4	1240	6.1	1030	5.2	537	4.3	183	5.4	632	4.4	214	4.0	102	5.4	632	7.8	2400	6.7	1460	6.1	1030
20,	4.4	214	6.3	1170	6.3	1170	6.4	1240	4.3	183	5.3	584	4.2	154	4.0	102	4.9	402	6.1	1030	6.4	1240	5.5	682
21,	4.2	154	5.8	846	7.0	1700	6.5	1320	4.3	183	4.5	247	4.1	127	4.2	154	4.9	402	5.6	734	5.9	906	5.5	682
22,	4.5	247	5.2	537	6.7	1460	6.5	1320	4.4	214	4.2	154	5.0	446	4.0	102	4.8	360	5.6	734	5.4	632	5.7	789
23,	4.7	320	5.2	537	6.0	969	7.2	1880	4.3	183	4.3	183	4.2	154	3.7	38	4.7	320	7.5	2130	5.4	632	10.2	4700
24,	4.5	247	5.2	537	5.2	537	6.5	1320	4.4	214	4.3	183	4.2	154	3.7	38	4.6	282	7.4	2040	5.4	632	8.4	2960
25,	4.5	247	6.2	1100	4.9	402	6.2	1100	4.4	214	4.3	183	4.1	127	4.7	320	4.6	282	6.7	1460	6.5	1320	6.8	1540
26,	4.6	282	6.8	1540	4.9	402	5.7	789	4.4	214	4.2	154	4.1	127	4.7	320	4.6	282	5.6	734	5.5	682	6.7	1460
27,	4.7	320	6.3	1170	4.9	402	5.5	682	4.5	247	4.2	154	4.0	102	10.45	4950	4.5	247	5.4	632	5.4	632	11.4	5900
28,	6.3	1170	5.9	906	6.3	1170	5.3	584	4.3	183	4.2	154	3.9	79	12.05	6550	4.5	247	5.3	584	5.3	584	9.5	4000
29,	6.8	1540	------	------	5.7	789	5.2	537	4.2	154	4.2	154	3.9	79	8.2	2760	4.7	320	5.2	537	5.4	632	6.4	1240
30,	8.6	3140	------	------	5.7	789	5.2	537	4.2	154	4.2	154	3.8	57	8.3	2860	5.9	906	4.9	402	5.4	632	6.3	1170
31,	6.2	1100	------	------	5.6	734	------	------	4.2	154	------	------	3.8	57	22.35	17400	------	------	4.9	402	------	------	7.5	2130

Note.—Relation of gage height to discharge affected by ice for brief periods of a few days during January and February. All gage readings are probably to water surface. Daily discharge determined from a fairly well defined discharge rating curve. No correction has been made to discharge for possible backwater from ice.

ESTIMATED MONTHLY DISCHARGE OF MONOCACY RIVER, NEAR FREDERICK, MD.

(Drainage Area 660 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1896.					
August, (4-31),	256	69	125	.189	.197
September,	480	69	115	.174	.194
October,	396	103	144	.218	.251
November,	2195	124	306	.464	.518
December,	396	124	187	.283	.326
a1897.					
January,	730	147	307	.465	.536
February,	9750	256	2062	3.12	3.25
March,	4400	575	1384	2.10	2.42
April,	2900	322	907	1.37	1.53
May,	10780	322	1650	2.50	2.88
June,	2195	198	492	.745	.831
July	4500	198	710	1.08	1.24
August,	11010	172	968	1.47	1.70
September,	812	114	191	.289	.322
October,	241	94	137	.208	.240
November,	9592	185	1008	1.53	1.71
December,	9330	550	1980	3.00	3.46
The year,	11010	94	983	1.49	20.120
b1898.					
January,	7020	416	2099	3.18	3.67
February,	9540	480	1479	2.24	2.33
March,	5350	437	1319	2.00	2.31
April,	1845	396	692	1.05	1.17
May,	8070	322	1575	2.39	2.76
June,	730	256	408	.618	.690
July,	675	124	223	.338	.390
August,	7020	147	926	1.40	1.61
September,	198	103	128	.194	.216
October,	6150	103	693	1.05	1.21
November,	6968	256	1132	1.72	1.92
December,	12850	480	1943	2.94	3.39
The year,	12850	103	1051	1.59	21.67
c1899.					
January,	9592	480	1971	2.99	3.45
February,	12690	575	2939	4.45	4.63
March,	12000	1370	3428	5.19	5.98
April	7230	396	1179	1.79	2.00
May,	2375	322	680	1.03	1.19
June,	5700	198	759	1.15	1.28
July	288	124	196	.297	.342
August,	525	103	208	.315	.363
September,	1025	85	309	.468	.522
October,	480	103	133	.202	.233
November,	2015	172	401	.608	.678
December,	1845	124	449	.680	.784
The year,	12690	85	1054	1.59	21.440

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a River frozen at gage January 25 to February 2. 1897; no corrections made in estimates. Estimates July 3 to December 31, 1897; liable to error owing to uncertainty of wire length during that period.

b River frozen February 2 to 9. 1898; no corrections made in estimates.

c River frozen at the gage January 2. February 9-21 and December 28-31, 1899; no correction made in the estimates.

ESTIMATED MONTHLY DISCHARGE OF MONOCACY RIVER, NEAR FREDERICK, MD.

(Drainage Area 660 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a1900.					
January,	4800	288	1030	1.56	1.80
February,	15840	525	2641	4.00	4.16
March,	8175	675	2188	3.32	3.83
April,	1295	358	576	.873	.974
May,	1760	226	438	.664	.766
June	1025	147	294	.445	.496
July,	702	69	154	.233	.269
August,	702	49	150	.227	.262
September,	147	55	82	.124	.138
October,	172	85	102	.155	.179
November,	3850	85	454	.688	.768
December,	6705	124	520	.788	.908
The year,	15840	49	719	1.090	14.560
1901.					
January,	2285	147	438	.664	.766
February,	525	226	329	.498	.519
March,	15530	256	2167	3.28	3.78
April,	12900	675	2742	4.15	4.63
May,	6100	396	1521	2.30	**2.65**
June,	2650	288	839	1.27	1.42
July	730	172	316	.479	.552
August,	1845	147	445	.674	.777
September,	1520	172	296	.448	.500
October,	575	172	268	.406	.468
November,	4000	198	480	.727	.811
December,	14740	358	2313	3.50	4.04
The year,	15530	147	1013	1.530	20.920
b1902.					
January,	12950	437	1924	2.92	3.37
February,	19200	960	3902	5.91	6.15
March,	20460	785	4677	7.09	8.17
April,	12800	480	2261	3.43	3.83
May,	575	226	339	.514	.593
June,	1845	147	325	.489	.546
July,	1680	124	335	.508	.586
August,	575	69	143	.217	.250
September,	3700	55	232	.352	.393
October,	8385	172	1157	1.75	2.02
November,	4000	198	552	.836	.933
December,	11960	730	3981	6.03	6.95
The year,	20460	55	1652	2.500	33.790

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a River frozen at the gage January 1-6 and February 1-4, 1900; no correction made in the estimates. Discharge interpolated September 29, 1900.

b River frozen at the gage February 4-19, 1902; no correction made in the estimates.

ESTIMATED MONTHLY DISCHARGE OF MONOCACY RIVER, NEAR FREDERICK, MD.

(Drainage Area 660 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a1903.					
January,	10790	730	3319	5.03	5.80
February,	16260	1155	3124	4.73	4.92
March,	16470	900	3400	5.15	5.94
April,	16680	840	3532	5.35	5.97
May,	9540	358	898	1.36	1.57
June,	16260	437	1806	2.74	3.06
July,	13740	525	2342	3.55	4.09
August,	6750	288	1063	1.61	1.86
September,	5700	256	795	1.20	1.34
October,	1930	226	477	.723	.834
November,	437	198	239	.362	.404
December,	6652	172	540	.818	.943
The year,	16680	172	1795	2.720	36.720
b1904.					
January,	14800	260	1069	1.61	1.86
February,	8758	294	1502	2.26	2.44
March,	11960	538	1812	2.72	3.14
April,	2400	294	729	1.10	1.23
May,	789	198	375	.561	.647
June,	4300	144	817	1.23	1.37
July,	2765	120	586	.881	1.02
August,	7120	80	436	.656	.756
September,	734	80	251	.377	.421
October,	969	80	209	.314	.362
November,	228	120	138	.208	.232
December,	3905	120	549	.826	.952
The year,	14800	80	706	1.060	14.430
c1905.					
January,	12170	538	1503	2.26	2.61
February,	734	368	409	.615	.640
March,	9440	538	3056	4.60	5.30
April,	2220	368	790	1.19	1.33
May,	450	170	279	.420	.484
June,	2860	144	748	1.12	1.25
July,	6605	260	1296	1.95	2.25
August,	13640	228	1427	2.15	2.48
September,	2130	170	546	.821	.916
October,	2045	144	583	.877	1.01
November,	5050	198	390	.586	.654
December,	13480	468	2124	3.19	.368
The year,	13640	144	1096	1.650	22.600

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a River frozen at the gage January 12-20, 1903; no correction made in the estimates.
b River frozen January 4-22 and Febbruary 15-22, 1904; no correction made in the estimates.
c River frozen January 27 to February 28, 1905; no correction made in the estimates.

ESTIMATED MONTHLY DISCHARGE OF MONOCACY RIVER, NEAR FREDERICK, MD.

(Drainage Area 660 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a1906.					
January,	13170	493	1657	2.51	2.89
February,	3905	260	824	1.25	1,30
March,	12220	584	2275	3.45	3.98
April,	16790	632	2877	4.36	4.86
May,	734	228	422	.639	.737
June,	5200	228	1037	1.57	1.75
July,	584	198	284	.430	.496
August,	10800	260	1776	2.70	3.11
September,	682	198	290	.439	.490
October,	7760	198	1494	2.25	2.59
November,	734	260	418	.633	.706
December,	6605	260	1428	2.17	2.50
The year,	16790	198	1232	1.87	25.41
b1907.					
January,	9650	682	2680	4.06	4.68
February,	1540	408	814	1.23	1.28
March,	12400	408	3240	4.91	5.66
April,	3810	538	967	1.47	1.64
May,	2490	368	686	1.04	1.20
June,	4700	330	1430	2.17	2.42
July,	10600	258	1430	2.17	2.50
August,	1100	165	375	.568	.65
September,	6400	138	831	1.26	1.41
October,	1320	194	330	.500	.58
November,	8500	194	1540	2.33	2.60
December,	11200	538	2810	4.26	4.91
The year,	12400	138	1430	2.16	29.53
1908.					
January,	9540	734	2130	3.23	3.72
February,	19200	493	3400	5.15	5.55
March,	6710	682	2470	3.74	4.31
April,	2040	408	811	1.23	1.37
May,	17300	408	3870	5.86	6.76
June,	906	225	408	.618	.69
July,	4200	138	592	.897	1.03
August,	1280	152	335	.508	.59
September,	1280	102	186	.282	.31
October,	762	126	235	.356	.41
November,	180	126	154	.233	.26
December,	472	126	212	.321	.37
The year,	19200	102	1240	1.87	25.37

a River frozen at the gage February 6-9, 1906; no correction made in the estimates.
b Discharge during the frozen period February 7 to 11, 1907, estimated, 958 second-feet.

ESTIMATED MONTHLY DISCHARGE OF MONOCACY RIVER, NEAR FREDERICK, MD.

(Drainage Area 660 Square Miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a1909.					
January,	3600	140	690	1.05	1.21
February,	10500	340	2560	3.88	4.04
March,	6970	500	1710	2.59	2.99
April,	4850	340	1350	2.05	2.29
May,	2090	240	564	.855	.99
June,	2960	247	982	1.49	1.66
July,	320	79	150	.227	.26
August,	537	38	99.2	.150	.17
September,	402	38	94.0	.142	.16
October,	282	38	85.6	.130	.15
November,	127	57	80.8	.122	.14
December,	9120	79	664	1.01	1.16
The year,	10500	38	752	1.14	15.22
b1910.					
January,	12600	----------	1700	2.58	2.97
February,	10200	247	2200	3.33	3.47
March,	7440	214	917	1.39	1.60
April,	9960	127	1210	1.83	2.04
May,	1030	183	388	.588	.68
June,	7770	183	1130	1.71	1.91
July,	789	79	236	.358	.41
August,	1540	38	169	.256	.30
September,	214	22	58	.089	.10
October,	102	15	10	.075	.09
November,	154	38	78	.118	.13
December,	300	79	127	.192	.22
The year,	12600	15	676	1.02	13.92
1911.					
January,	3140	154	598	.906	1.04
February,	1540	282	815	1.23	1.28
March,	1880	360	825	1.25	1.44
April,	3670	402	990	1.50	1.67
May,	789	154	293	.444	.51
June,	632	154	264	.400	.45
July,	446	57	157	.238	.27
August,	17400	38	1280	1.94	2.24
September,	15200	127	1180	1.79	2.00
October,	2400	79	661	1.00	1.15
November,	2960	320	865	1.31	1.46
December,	5900	360	1300	1.97	2.27
The year,	17400	38	769	1.17	15.78

a Ice conditions January 19-20 and December 23-31, discharge estimated.
b Ice conditions January 1-18. Discharge January 1-6, slightly reduced on account of ice.

WILLS CREEK.

DESCRIPTION OF BASIN.

Wills Creek rises on the western slope of Savage Mountain, in the southeastern part of Somerset county, Pennsylvania, flowing easterly for about 18 miles to Hyndman, Bedford county, Pennsylvania, thence southerly through Londonderry township, Bedford county, into Maryland, where it empties into the Potomac river, near Cumberland, Md. Its length in Pennsylvania is about 28 miles; its total drainage area is about 240 square miles, 187 of which lie in Pennsylvania. Throughout its entire course it flows through a narrow valley, the bordering hills being heavily timbered. There are no large streams tributary to Wills Creek in Pennsylvania or Maryland, although there are numerous mountain streams at the headwaters. The largest towns in its watershed are Hyndman, Pennsylvania, and Cumberland, Md., the former of which obtains a domestic water supply from a tributary of the parent stream. It is also used, at the state line, for industrial purposes, by the railroad.

The mean annual precipitation over this watershed, in Pennsylvania, is from 40 to 45 inches.

The discharge of this creek was measured from May 5th, 1905, to July 15th, 1906, near Cumberland, Md., a short distance above the mouth.

POTOMAC BASIN—STATION NO. 4.

WILLS CREEK AT CUMBERLAND, MD.

DESCRIPTION OF STATION.

This station was established May 5th, 1905, by the United States Geological Survey, at the highway bridge at the upper end of "The Narrows," Cumberland, Md., and was discontinued July 14th, 1906.

The channel is straight for 200 feet above and 500 feet below the station. The current is very swift. Both banks are high and do not overflow. The bed of the stream is rocky, very rough and permanent. There are two channels at all but very low stages.

Discharge measurements are made from the downstream side of the two span steel bridge to which the gage is fastened. The initial point for soundings is the face of the right abutment.

A standard chain gage was fastened to the downstream side of the bridge near the middle of the right span. The length of the chain from the bottom of the weight to the marker was 26.98 feet. Bench mark No. 1 was a square chiselled draft on the top of the bridge seat stone at the downstream side of the right abutment; elevation 21.88 feet above gage datum. Bench mark No. 2 was top of the pulley wheel of the gage; elevation 26.65 feet above gage datum. Bench mark No. 3 was top of horizontal of second projecting piece from right bank, downstream side of bridge; elevation 23.40 feet above gage datum. The gage was read twice daily by H. E. McKenzie.

Ice conditions probably did not affect the flow during the continuance of the records at this station.

Twelve discharge measurements were made during the operation of this station.

The following data have been furnished by the United States Geological Survey:

DISCHARGE MEASUREMENTS OF WILLS CREEK, AT CUMBERLAND, MD.

(Drainage area 240 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.	
	1905							
1.	May 13,	Paul	86	262	1.40	5.00	368	
	1905							
2.	April 17,	Grover,	78	233	1.01	4.20	236	
3.	May 6,	Tillinghast & Soper,	83	217	.60	3.72	130	
4.	June 8,	Packard,	80	254	.98	4.22	248	
5.	Nov. 6,	Murphy,	68	201	.65	3.68	130	
	1906							
6.	Mar. 17.	Bolster & Padgett,	77	213	.82	4.01	175	
7.	April 2	Follansbee,	115	467	3.20	6.32	1490	
8.	April 10.	Bolster,	110	429	2.80	6.05	1200	
9.	April 11.	Bolster,	106	404	2.65	5.88	1070	
10.	May 26,	Follansbee	69	169	.33	3.27	55	

DISCHARGE TABLE OF WILLS CREEK, AT CUMBERLAND, MD.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
3.00	30	4.00	188	5.00	525	6.00	1170	7.00	2295
.10	38	.10	214	.10	570	.10	1260	.10	2435
.20	48	.20	241	.20	620	.20	1355	.20	2575
.30	60	.30	270	.30	675	.30	1455	.30	2720
.40	73	.40	301	.40	735	.40	1560	.40	2870
.50	88	.50	334	.50	795	.50	1670	.50	3020
.60	104	.60	368	.60	860	.60	1785	.60	3170
.70	122	.70	404	.70	930	.70	1905	.70	3320
.80	142	.80	442	.80	1005	.80	2030	.80	3480
.90	164	.90	482	.90	1085	.90	2160	.90	3640

Note:—This table is strictly applicable for open-channel conditions. It is based on nine discharge measurements made during 1905 and 1906. It is well defined between gage heights 3 feet and 6.5 feet.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WILLS CREEK, AT CUMBERLAND, MD.

1905.	MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	-----	------	3.75	126	3.65	113	3.55	96	3.62	108	3.05	34	3.92	169	4.52	341
2,	------	------	3.95	176	4.00	188	3.45	80	3.55	96	3.20	48	3.80	142	4.38	295
3,	------	------	3.82	146	3.75	132	3.40	73	3.60	104	3.35	66	3.75	132	7.08	2407
4,	------	------	3.70	122	3.65	113	3.30	60	3.55	96	3.30	60	3.75	132	6.22	1375
5,	------	------	3.68	118	3.60	104	3.30	60	3.45	80	3.18	46	3.65	113	5.45	765
6,	3.70	122	3.60	104	3.58	102	3.28	58	3.38	70	3.08	36	3.65	113	5.02	534
7,	4.00	188	4.20	241	6.58	1760	3.20	48	3.32	63	3.00	30	3.65	113	4.70	404
8,	3.82	146	4.25	256	6.70	1905	3.18	46	3.22	50	3.00	30	3.60	104	4.50	334
9,	3.80	142	4.05	201	5.70	930	3.15	43	3.20	48	3.00	30	3.60	104	4.38	295
10,	3.80	142	3.90	164	5.42	747	3.08	36	3.18	46	3.00	30	3.55	96	4.25	256
11,	3.80	142	6.20	1355	5.05	548	3.10	38	5.25	648	4.05	201	3.50	88	4.05	201
12,	4.08	209	5.42	747	4.70	404	3.80	142	5.00	525	4.00	188	3.45	80	4.02	193
13,	3.98	183	4.88	474	4.60	368	3.48	85	4.60	368	3.72	146	3.42	76	3.98	183
14	4.05	201	4.48	327	4.98	516	3.45	80	4.15	228	3.55	96	3.40	73	3.80	142
15,	5.42	747	4.25	256	4.58	361	5.85	1050	3.98	183	3.42	76	3.35	66	3.55	96
16,	5.08	561	4.52	341	4.32	276	4.85	462	3.82	146	3.40	73	3.38	68	3.42	76
17,	4.85	462	3.90	164	4.10	214	4.35	285	3.72	126	3.32	63	3.45	80	3.32	63
18,	4.60	368	3.90	164	3.85	153	4.02	193	3.78	138	3.30	60	3.40	73	3.68	118
19,	4.45	318	3.90	164	3.82	146	3.85	153	3.68	118	3.30	60	3.35	66	3.92	169
20,	4.28	264	3.70	122	4.25	256	3.72	126	3.55	96	5.15	595	3.30	60	3.75	132
21,	4.10	214	4.05	201	3.88	160	3.68	118	3.45	80	4.65	386	3.25	54	6.60	1785
22,	4.00	188	4.15	228	3.88	160	3.52	91	3.40	73	4.38	295	3.20	48	6.25	1405
23,	3.92	169	4.32	276	4.32	276	3.42	76	3.32	63	4.15	228	3.25	54	5.80	1005
24,	3.82	146	4.45	318	3.98	183	3.32	63	3.28	58	4.02	193	3.30	60	5.32	687
25,	3.72	126	4.50	334	3.80	142	5.10	570	3.18	46	3.90	164	3.35	66	5.00	525
26,	3.62	108	4.38	295	3.68	118	4.58	361	3.15	43	4.45	318	3.30	60	4.75	423
27,	3.98	183	4.30	270	3.60	104	4.18	236	3.10	38	4.25	256	3.25	54	4.55	351
28,	3.70	122	4.02	193	3.55	96	3.98	183	3.10	38	4.18	236	3.25	54	4.35	285
29,	3.60	104	3.90	164	3.60	104	3.82	146	3.05	34	4.12	219	5.10	570	5.22	631
30,	3.52	92	3.72	126	3.85	153	4.08	209	3.05	34	4.02	193	4.88	474	5.05	548
31,	3.52	92	------	------	3.65	113	3.72	146	------	-----	4.00	188	------	------	4.65	386

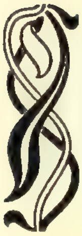
DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WILLS CREEK AT CUMBERLAND, MD.

1906.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.45	318	4.25	256	3.50	88	6.70	1905	4.02	193	3.50	88	3.35	66
2,	4.25	256	4.05	201	3.50	88	6.30	1455	4.25	256	3.48	85	3.30	60
3,	4.45	318	3.70	122	4.15	228	6.30	1455	4.18	236	3.38	70	3.25	54
4,	5.95	1130	4.02	193	5.25	648	6.20	1355	4.08	209	3.30	60	3.25	54
5,	5.78	990	4.02	193	4.60	368	6.32	1480	4.00	188	3.50	88	3.20	48
6,	5.50	795	3.70	122	4.25	256	6.32	1480	4.00	188	3.65	113	3.18	46
7,	5.12	580	3.60	104	4.25	256	5.45	765	3.90	164	6.60	1785	3.15	43
8,	4.95	522	3.68	118	4.30	270	5.30	675	3.88	160	5.50	795	3.10	38
9,	4.65	386	3.75	132	4.22	247	5.60	860	3.80	142	4.75	423	3.05	34
10,	4.38	295	3.75	132	4.18	236	6.00	1170	3.80	142	4.30	270	3.05	34
11,	4.32	276	3.70	122	4.12	219	5.90	1085	3.80	142	4.00	188	3.05	34
12,	4.45	318	3.70	122	4.08	209	5.60	860	3.75	132	3.80	142	3.18	46
13,	4.42	308	3.60	104	4.02	193	5.42	747	3.70	122	3.78	138	3.08	36
14,	4.40	301	3.68	118	4.05	201	5.10	570	3.65	113	3.72	126	3.02	32
15,	4.45	318	3.65	113	4.05	201	6.30	1455	3.60	104	3.68	118	------	------
16,	4.70	404	3.60	104	4.10	214	5.92	1100	3.55	96	3.60	104	------	------
17,	5.00	525	3.55	96	4.10	214	5.58	847	3.60	104	3.55	96	------	------
18,	4.88	474	3.50	88	4.10	214	5.32	687	3.52	91	3.62	108	------	------
19,	5.10	570	3.50	88	4.10	214	5.02	534	3.48	85	3.85	153	------	------
20,	5.02	534	3.50	88	4.18	236	4.88	474	3.45	80	3.90	164	------	------
21,	5.12	580	3.70	122	4.20	241	4.72	411	3.45	80	3.88	160	------	------
22,	5.25	648	3.68	118	4.20	241	4.68	397	3.40	73	3.78	138	------	------
23,	7.30	2720	3.58	101	4.20	241	4.62	375	3.40	73	3.78	138	------	------
24,	6.95	2250	3.55	96	4.20	241	4.52	341	3.35	66	3.70	122	------	------
25,	5.88	1070	3.65	113	4.20	241	4.50	334	3.30	60	3.58	102	------	------
26,	5.48	783	3.50	88	4.20	241	4.45	318	3.30	60	3.52	91	------	------
27,	5.08	561	3.50	88	6.10	1260	4.40	301	3.50	88	3.50	88	------	------
28,	4.90	482	3.50	88	7.70	3320	4.32	276	3.90	164	3.55	96	------	------
29,	4.75	423	------	------	7.20	2575	4.22	247	3.65	113	3.50	88	------	------
30,	4.55	351	------	------	7.05	2365	4.12	219	3.55	96	3.38	70	------	------
31,	4.42	308	------	------	7.90	3640	------	------	3.40	73	------	------	------	------

ESTIMATED MONTHLY DISCHARGE OF WILLS CREEK, AT CUMBERLAND, MD.

(Drainage area 240 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1905.					
May (6-31),	747	91	221	.921	.891
June,	1355	104	272	1.13	1.26
July,	1905	96	353	1.47	1.70
August,	1045	36	174	.725	.836
September,	647	34	128	.533	.595
October,	595	30	149	.621	.716
November,	570	48	115	.479	.534
December,	2407	63	529	2.20	2.54
1906.					
January,	2720	256	637	2.65	3.06
February,	256	88	122	.508	.529
March,	3640	88	626	2.61	3.01
April,	1905	219	806	3.36	3.75
May,	256	60	126	.525	.605
June,	1785	60	207	.862	.962



OHIO BASIN.

ALLEGHENY RIVER.

DESCRIPTION OF BASIN.

The Allegheny river, the largest tributary of the Ohio river in Pennsylvania, draining 11,160 square miles in Pennsylvania and New York, rises in the hilly plateau on the west slope of the Allegheny mountains in northwestern Pennsylvania, at an elevation of about 2250 feet above sea level. Its tributaries drain the west slope of these mountains from Somerset county, near the southern boundry, through the Conemaugh river, to the extreme northern boundry, and westward nearly to the Ohio line through Oil and French creeks.

Its actual source is in Potter county, in about the center of the northern border of the State, whence it flows northwesterly for about 80 miles into New York, thence about 120 miles southwesterly into Pennsylvania again, 47 miles being in New York. From this point it is 110 miles to the mouth, its junction with the Monongahela river at Pittsburgh, where the Ohio river is formed; the total length of the river being 310 miles.

In Potter and McKean counties the river and its tributaries are small mountain streams, in well wooded, steep valleys, and a sparsely inhabited region. In New York the main valley is wide and flat, the slope slight and the land under a high state of cultivation, and thickly populated. Coming back into Pennsylvania the hills converge, the valley narrowing and the slope is steeper. The population again becomes scattered, the tributary valleys well wooded, and the bordering hills are high and timbered. The larger tributaries, however, contain large areas of cleared, cultivated land, notably those from the west.

The lower 150 miles is more densely populated, many railroads and large towns and thriving industries bordering its banks, and using its waters. For 25 miles above Pittsburgh the river has been slackwatered by three dams and the banks are almost continuously populated.

For the upper 30 miles, the slope is 27 feet per mile, the next 65 miles, 2.4 feet per mile, the next 87 miles, 3.7 feet per mile, and the lower 126 miles, 2.1 feet per mile.

In the first 115 miles of its length the river bed consists mostly of fine sand and gravel, much of it lying above the terminal morain; from this point, however, the bottom changes to loose stones and boulders, riffles occur frequently, but seldom is solid rock in evidence.

The largest tributary, the Kiskiminetas river, draining 1892 square miles, comes in 25 miles above the junction of the Monongahela and Allegheny rivers, no streams of importance joining it between. From that point up many large tributaries come in, mostly from the east, as follows: Crooked, Mahoning, and Red Bank creeks, Clarion river, French, Oil, Tionesta, Brokenstraw, Conewango and Kinzua creeks, several of which drain over 1000 square miles. Those from the west, French, Oil, Brokenstraw and Conewango drain the glaciated area, containing round gravel hills and numerous lakes and swamps, little timber, and their watersheds are quite generally cultivated. Those from the east drain a mountainous, timbered and less inhabited and cultivated country.

The drainage basin is about 124 miles in extreme width and 175 miles in length, much narrower at its southern point, and its greatest width is at the Pennsylvania-New York State line.

The basin embraces widely varying topographic conditions, ranging from high, rough mountainous country along the east boundary, to broad, terraced valleys with wide bottom lands in New York state. In it are included the oil and gas producing regions, vast bituminous coal fields, much of the remaining merchantable timber and many other valuable natural resources.

Most of this basin lies in the zone of 40 to 45 inch rainfall, while a small portion along the southwestern part is subject to 45 to 50 inch rainfall, and another small section near the mouth to from 35 to 40 inches.

The flow is measured at Kittanning, 48 miles above Pittsburgh, and at Red House, New York, since August 18, 1904, and Sept. 4, 1903, respectively.

OHIO BASIN—STATION NO. 1.

ALLEGHENY RIVER AT RED HOUSE, N. Y.

DESCRIPTION OF STATION.

This station was established by the United States Geological Survey on September 4th, 1903, on the Red House bridge, near the station of the Erie and Pennsylvania railroads and about five miles below Salamanca, N. Y., about thirteen miles above the point where the river leaves New York state. It is maintained by the United States Geological Survey in cooperation with the New York State engineer. The channel is straight for 800 feet above and below the station, it being 494 feet wide between abutments, broken by two piers. The right bank is high and does not overflow, while the left bank overflows only at flood stages. At extreme high water there is an additional flood channel on the left bank. The bed is of gravel and is regular, and the current velocity is well distributed.

Discharge measurements are made from the down-stream side of the bridge, the initial point for soundings being the left end of the down-stream side of the bridge.

A standard chain gage is fastened to the upstream side of the bridge in the middle of the left span. The length of chain from the bottom of the weight to the marker is 24.16 feet. The bench mark is a circle cut on the down-stream side of the left abutment; elevation—21.09 feet above the datum of the gage. The gage is read twice each day by O. A. Gates.

At Olean, N. Y., the wasteway from the Cuba reservoir enters the stream through Olean creek. This reservoir is located on the divide between Oil creek, tributary to Allegheny river, and Genessee river. The storage is commonly turned into Genessee river through the abandoned summit level of Genessee Valley Canal, but may be diverted into Oil creek through the guard locks at the head of the canal. Moderate ice conditions usually prevail during the winter months.

The following data have been furnished by the United States Geological Survey:

DISCHARGE MEASUREMENTS OF ALLEGHENY RIVER, AT RED HOUSE, NEW YORK.

(Drainage area 1,640 square miles.)

No.	Date.	Hydrographer.	Width.	Area of Section.	Mean Velocity.	Gage Height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.	
	1903.							
1	Sept. 4,	R. E. Horton, --	--------	--------	--------	4.33	1,909	
	1904.							
2	April 10,	Horton & Mott,	--------	2,807	4.97	8.35	14,220	
3	July 18,	C. C. Covert, --	--------	1,198	.99	3.68	1,188	
	1905.							
4	March 25,	W. B. Freeman,	368	3,313	5.88	9.63	19,470	
5	March 27,	W. B. Freeman,	368	3.412	6.25	9.91	21,320	
6	March 28,	W. B. Freeman,	368	3,385	6.07	9.88	20,570	
7	March 28,	W. B. Freeman,	368	3,353	6.01	9.77	20,160	
8	March 29,	W. B. Freeman,	368	3,168	5.65	9.34	17,930	
9	March 30,	W. B. Freeman,	368	3,007	5.33	8.88	16,040	
10	March 31,	W. B. Freeman,	368	2,764	4.73	8.24	13,060	
11	April 1,	W. B. Freeman,	368	2,489	4.09	7.44	10,170	
12	April 1,	W. B. Freeman,	368	2,415	3.89	7.24	9,386	
13	April 2,	W. B. Freeman,	368	2,286	3.51	6.77	8,029	
14	April 3,	W. B. Freeman,	368	2,045	2.94	6.11	6,015	
15	April 3,	W. B. Freeman,	363	2,003	2.84	5.98	5,681	
16	April 4,	W. B. Freeman,	363	1,867	2.40	5.58	4,484	
17	April 5,	W. B. Freeman,	363	1,797	2.32	5.41	4,161	
18	July 31,	Murphy & Covert,	362	1,214	0.93	3.74	1,135	
19	August 26,	C. C. Covert, --	357	993	0.45	3.05	446	
	1906.							
20	April 16,	C. C. Covert, --	370	2,250	3.48	6.59	7,820	
	1907.							
21	March 16,	C. C. Covert, --	366	2,390	3.75	7.00	8,970	
	1908.							
22	October 20,	C. R. Adams, --	355	840	.17	2.70	145	
	1909.							
23	August 18,	C. C. Covert, --	80	103	2.63	2.91	271	Msmt. made at wading station one-half mile up-stream.
	1910.							
24	July 24,	W. G. Hoyt, ---	255	173	1.88	3.04	326	Measurement made by wading below bridge.
25	August 25,	C. C. Covert, --	344	1,050	.61	3.30	604	
	1911.							
26	Feb. 14,	F. J. Shuttleworth,	341	1,290	1.14	4.00	1,470	
27	April 19,	C. S. DeGolyer,--	345	1,830	2.38	5.52	4,360	

DISCHARGE TABLE FOR ALLEGHENY RIVER, AT RED HOUSE, N. Y., FROM 1903 TO 1906.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
2.70	195	4.00	1471	.20	3580	.80	8090	.40	18300
.80	260	.10	1605	.30	3820	7.00	8740	.60	19220
.90	328	.20	1745	.40	4065	.20	9400	.80	20140
3.00	400	.30	1891	.50	4315	.40	10080	10.00	21100
.10	478	.40	2043	.60	4570	.60	10790	.20	22100
.20	564	.50	2200	.70	4830	.80	11530	.40	23100
.30	658	.60	2365	.80	5100	8.00	12300	.60	24100
.40	759	.70	2540	.90	5375	.20	13120	.80	25100
.50	866	.80	2725	6.00	5660	.40	13960	11.00	26200
.60	978	.90	2920	.20	6245	.60	14800	.50	28950
.70	1095	5.00	3130	.40	6845	.80	15660	12.00	31800
.80	1216	.10	3350	.60	7460	9.00	16540		
.90	1341					.20	17420		

Note:—The above table is applicable only for open-channel conditions. It is based on 20 discharge measurements made during 1903-1906. It is very well defined between gage heights 3.1 feet and 10 feet.

DISCHARGE TABLE FOR ALLEGHENY RIVER, AT RED HOUSE, N. Y., FROM 1907 TO 1909.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
2.60	80	.90	295	.20	560	.40	755	.60	978
.70	145	3.00	380	.30	655	.50	866	.70	1095
.80	220	.10	470						

Note:—The above table is not applicable for ice or obstructed channel conditions. It is based on discharge measurements made during 1903 to 1908, making a new low water table for 1907-1909. Above gage height 3.7 feet, the discharge is the same as the 1903-1906 table.

DISCHARGE TABLE FOR ALLEGHENY RIVER, AT RED HOUSE, N. Y., FROM JAN. 1, TO DEC. 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
2.60	105	.50	2200	.40	6845	.30	13540	.20	22100
.70	145	.60	2365	.50	7150	.40	13960	.30	22600
.80	190	.70	2540	.60	7460	.50	14380	.40	23100
.90	250	.80	2725	.70	7770	.60	14800	.50	23600
3.00	320	.90	2920	.80	8090	.70	15220	.60	24100
.10	405	5.00	3130	.90	8410	.80	15660	.70	24600
.20	500	.10	3350	7.00	8740	.90	16100	.80	25100
.30	600	.20	3580	.10	9070	9.00	16540	.90	25650
.40	710	.30	3820	.20	9400	.10	16980	11.00	26200
.50	825	.40	4065	.30	9740	.20	17420	.10	26750
.60	945	.50	4315	.40	10080	.30	17860	.20	27300
.70	1070	.60	4570	.50	10430	.40	18300	.30	27850
.80	1200	.70	4830	.60	10790	.50	18760	.40	28400
.90	1335	.80	5100	.70	11160	.60	19220	.50	28950
4.00	1470	.90	5375	.80	11530	.70	19680	.60	29500
.10	1610	6.00	5660	.90	11910	.80	20140	.70	30050
.20	1750	.10	5950	8.00	12300	.90	20620	.80	30600
.30	1895	.20	6245	.10	12700	10.00	21100	.90	31150
.40	2045	.30	6545	.20	13120	.10	21600		

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ALLEGHENY RIVER, AT RED HOUSE, N .Y.

1903.	September.		October.		November.		December.	
Day.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1,			3.35	708	3.70	1095	4.05	1538
2,			3.70	1095	3.70	1095	4.00	1471
3,			3.85	1278	3.60	978	3.85	1278
4,	4.35	1967	3.70	1095	3.60	978	3.75	1156
5,	4.15	1675	4.28	1862	3.60	978	3.65	1036
6,	4.00	1471	4.60	2365	3.70	1095	3.60	978
7,	3.88	1316	4.32	1921	3.90	1341	3.60	978
8,	3.82	1241	5.00	3130	3.70	1095	3.60	978
9,	3.78	1192	7.05	8905	3.65	1036	3.60	978
10.	3.70	1095	6.35	6695	3.60	978	3.60	978
11,	4.40	2043	5.75	4965	3.60	978	3.55	922
12,	5.00	3130	5.20	3580	3.65	1036	3.50	866
13,	4.25	1818	4.82	2764	3.70	1095	3.50	866
14,	4.15	1625	4.55	2282	3.70	1095	3.50	866
15,	3.85	1278	4.35	1967	3.60	978	3.50	866
16,	3.75	1156	4.25	1818	3.60	978	4.10	1605
17,	3.70	1095	4.15	1675	7.30	9740	4.20	1745
18,	5.00	3130	4.15	1675	7.95	12105	4.20	1745
19,	4.60	2365	4.70	2540	7.30	9740	4.20	1745
20,	4.22	1774	4.50	2200	6.45	6998	4.22	1774
21,	4.05	1538	4.30	1891	6.25	6395	4.25	1818
22,	3.90	1341	4.22	1774	5.80	5100	4.25	1818
23,	3.75	1156	4.20	1745	5.32	3869	4.25	1818
24,	3.70	1095	4.10	1605	5.18	3534	4.22	1774
25,	3.58	956	4.00	1471	5.00	3130	4.25	1818
26,	3.50	866	3.85	1278	4.65	2452	a	
27,	3.50	866	3.85	1278	4.45	2122	a	
28,	3.40	759	3.65	1036	4.35	1967	a	
29,	3.42	780	3.80	1216	4.25	1818	a	
30,	3.35	708	3.80	1216	4.20	1745	a	
31,			3.70	1095			a	

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ALLEGHENY RIVER, AT RED HOUSE, N. Y.

1904.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	4.70	------	6.10	------	7.30	9740	6.30	6545	7.32	9808	3.25	611	3.32	678	3.45	812	4.50	2200	3.90	1341	3.40	------
2,	------	------	4.50	------	6.85	------	8.35	13750	5.90	5375	6.55	7305	3.55	922	3.28	639	3.38	739	4.18	1717	3.85	1278	3.40	------
3,	------	------	4.35	------	8.50	------	7.85	11720	5.55	4442	6.05	5805	3.55	922	3.20	564	3.45	812	4.05	1538	3.80	1216	3.40	------
4,	------	------	4.00	------	8.68	------	7.28	9672	5.25	3700	5.55	4442	3.40	759	3.20	564	3.70	1095	4.00	1471	3.72	1119	3.40	------
5,	------	------	4.30	------	8.00	------	6.88	8346	4.98	3088	5.32	3869	3.48	845	3.20	564	3.45	812	3.88	1316	3.62	1001	3.90	------
6,	4.50	------	4.40	------	7.28	------	6.55	7305	4.82	2764	5.05	3240	3.82	1241	3.20	564	3.40	759	3.78	1192	3.50	866	3.35	------
7,	4.50	------	8.60	------	8.75	------	6.25	6395	4.60	2365	4.85	2822	3.90	1341	3.20	564	3.32	678	3.70	1095	3.50	866	3.32	------
8,	4.50	------	10.70	------	10.50	------	6.12	6009	4.48	2169	4.60	2365	3.75	1156	3.12	495	3.30	658	3.70	1095	3.50	866	3.30	------
9,	4.50	------	9.85	------	10.10	------	7.80	11530	4.40	2043	4.60	2365	3.60	978	3.10	478	3.22	583	3.80	1216	3.50	866	3.30	------
10,	4.50	------	9.00	------	9.05	------	8.32	13624	4.25	1818	4.42	2074	6.05	5805	3.00	400	3.20	564	4.00	1417	3.50	866	3.35	------
11,	4.50	------	8.10	------	7.82	------	7.78	11456	4.20	1745	4.25	1818	6.00	5660	3.00	400	3.20	564	4.70	2540	3.45	812	3.52	------
12,	4.50	------	7.00	------	6.75	------	7.50	10430	4.12	1633	4.00	1471	5.20	3580	3.00	400	3.20	564	5.00	3130	3.40	759	3.60	------
13,	4.50	------	6.00	------	6.12	------	7.10	9070	4.05	1538	3.95	1406	5.45	4190	3.00	400	3.12	495	5.10	3350	3.50	866	3.60	------
14,	4.50	------	5.48	------	5.50	------	6.50	7150	3.90	1341	3.80	1216	4.95	3025	3.00	400	3.10	478	5.00	3130	3.50	866	3.55	------
15,	------	------	4.90	------	5.12	------	6.00	5660	4.05	1538	3.80	1216	4.40	2043	3.00	400	3.10	478	4.70	2540	3.45	812	3.50	------
16,	4.50	------	4.55	------	4.85	2822	5.50	4315	4.22	1774	3.75	1156	4.15	1675	3.00	400	3.10	478	4.45	2122	3.45	812	3.50	------
17,	------	------	4.40	------	4.60	2365	5.70	4830	4.15	1675	3.55	922	3.95	1406	3.00	400	3.20	564	4.25	1818	3.40	759	3.50	------
18,	4.50	------	4.30	------	4.68	2505	5.80	5100	4.20	1745	3.50	866	3.80	1216	3.00	400	3.25	611	4.10	1605	3.35	708	3.50	------
19,	4.50	------	4.10	------	4.70	2540	5.65	4700	6.15	6098	3.50	866	3.70	1095	3.00	400	3.22	583	3.95	1406	3.30	658	3.50	------
20,	4.50	------	3.95	------	5.45	4190	5.35	3942	6.20	6245	3.48	845	3.50	866	3.15	521	3.12	495	3.78	1192	3.30	658	3.50	------
21,	4.60	------	a	------	5.88	5320	5.20	3580	5.72	4884	3.52	888	3.48	945	3.60	978	3.05	439	3.68	1072	3.30	658	3.52	------
22,	7.00	------	a	------	5.55	4442	5.20	3580	5.35	3942	3.62	1001	3.38	739	4.00	1471	3.00	400	4.15	1675	3.30	658	3.60	------
23,	9.95	------	a	------	8.25	13330	5.00	3130	5.15	3465	3.80	1216	3.30	658	4.35	1967	3.00	400	5.10	3350	3.30	658	3.62	------
24,	9.40	------	4.58	------	8.85	15880	4.82	2764	5.80	5100	3.65	1036	3.58	956	4.40	2043	3.05	439	5.10	3350	3.30	658	5.25	------
25,	8.95	------	4.38	------	8.98	16452	5.22	3628	5.90	5375	3.48	845	3.45	812	4.15	1675	4.20	1745	4.90	2920	3.30	658	5.75	------
26,	8.10	------	4.00	------	11.10	26750	5.35	3942	5.65	4700	3.40	759	3.32	678	3.90	1341	4.75	2632	4.60	2365	3.25	611	5.45	------
27,	6.90	------	3.95	------	10.70	24600	5.20	3580	6.60	7460	3.28	639	3.30	658	3.90	1341	4.70	2540	4.60	2365	3.40	759	6.05	5805
28,	6.45	------	3.85	------	9.50	18760	5.80	5100	6.45	6998	3.20	564	3.30	658	4.00	1471	4.45	2122	4.50	2200	3.30	------	8.05	12500
29,	6.10	------	4.10	------	8.20	13120	6.30	6545	5.78	5046	3.20	564	3.68	1072	3.70	1095	4.15	1675	4.30	1891	3.20	------	6.90	8410
30,	5.40	------	------	------	7.25	9570	6.70	7770	5.65	4700	3.20	564	3.65	1036	3.52	888	4.50	2200	4.20	1745	3.25	------	6.20	6245
31,	5.00	------	------	------	6.88	8346	------	------	7.50	10430	------	------	3.45	812	3.45	812	------	------	4.00	1471	------	------	5.45	4190

Notes:—River frozen Jan. 1-23, when ice went out. On account of probable ice conditions Jan. 24 to Mar. 15 inc. no discharge has been applied.
River frozen Nov. 28 to Dec. 26.
a No record.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ALLEGHENY RIVER, AT RED HOUSE, N. Y.

1905	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.52		4.5		4.43		7.35	9910	4.45	2122	3.48	845	3.95	1406	3.81	1228	2.95	364	2.8	260	3.85	1278	7.00	8740
2,	5.76		4.85		4.43		6.45	6998	4.3	1891	3.4	759	4.02	1498	3.58	956	2.95	364	2.8	260	4.1	1605	5.1	3350
3,	5.86		4.95		4.43		6.0	5660	4.25	1818	3.3	658	4.08	1578	3.44	802	2.92	342	2.9	328	4.0	1471	6.55	7305
4,	4.46		4.75		4.43		5.55	4442	4.18	1717	3.3	658	4.05	1538	5.31	668	2.9	328	3.0	400	4.0	1471	7.15	9235
5,	5.16		4.74		4.43		5.35	3942	4.0	1471	3.3	658	4.6	2365	3.14	512	2.9	328	3.12	495	4.0	1471	6.65	7615
6,	5.16		4.69		4.43		5.18	3534	4.0	1471	3.45	812	5.0	3130	3.11	487	3.0	400	3.15	521	4.8	2725	6.3	6545
7,	4.91		4.54		4.43		5.0	3130	4.25	1818	5.2	3580	5.4	4065	3.26	620	3.0	400	3.1	478	5.0	3130	5.85	5238
8,			4.54		4.43		4.85	2822	4.35	1967	5.25	3700	5.85	5238	3.38	739	3.0	400	2.88	314	5.0	3130	5.5	4315
9,	4.34		4.54		4.58		4.6	2365	4.18	1717	4.85	2822	5.3	3820	3.36	719	2.9	328	2.8	260	5.2	3580	5.25	3700
10,	4.21		4.52		4.83		4.55	2282	4.0	1471	4.35	1967	4.45	2122	3.31	668	2.85	294	2.72	208	5.2	3580	5.05	3240
11,	4.26		4.44		5.02		4.5	2200	3.9	1341	4.45	2122	4.45	2122	3.26	620	2.95	364	2.75	228	4.6	2365	4.85	2823
12,	4.26		4.41		5.22		4.65	2452	3.8	1216	4.7	2540	4.85	2822	3.48	845	3.7	1095	3.5	866	4.6	2365	4.75	2632
13,	5.06		4.44		5.17		4.9	2920	3.8	1216	4.5	2200	5.1	3350	3.46	823	3.72	1119	4.5	2200	4.5	2200	4.55	2282
14,	5.46		4.44		4.92		4.7	2540	3.8	1216	4.3	1891	5.25	3700	3.61	990	3.68	956	4.25	1818	4.38	2013	4.35	1967
15,	5.01		4.39		4.92		4.6	2365	3.8	1216	4.02	1498	5.2	3580	3.56	933	3.35	708	3.95	1406	4.3	1891	4.15	1675
16,	4.81		4.39		4.92		4.6	2365	3.72	1119	3.92	1367	4.6	2365	3.54	911	3.3	658	3.75	1156	4.3	1891	3.85	1278
17,	4.71		4.39		4.92		4.5	2200	3.7	1095	4.4	2043	4.25	1818	3.46	823	3.3	658	3.55	922	4.2	1745	3.5	866
18,	4.64		4.39		6.52		4.5	2200	3.7	1095	5.25	3700	4.05	1538	3.38	739	3.5	866	3.4	759	4.2	1745	3.6	978
19,	4.5		4.36		11.42	28510	4.55	2282	3.68	1072	5.5	4315	3.98	1445	3.28	639	3.3	658	4.05	1538	4.0	1471	3.85	1278
20,	4.37		4.34		11.57	29335	4.85	2822	3.6	978	5.3	3820	3.82	1241	3.21	573	3.2	564	4.6	2365	4.0	1471	3.55	922
21,	4.27		4.34		11.67	29885	7.0	2540	3.6	978	5.6	4570	3.68	1072	3.16	530	3.2	564	4.9	2920	3.7	1095	4.1	1605
22,	4.23		4.33		11.12	26860	7.65	10975	3.55	922	7.18	9334	3.56	933	3.14	512	3.12	495	5.0	3130	3.45	812	6.4	6845
23,	4.15		4.33		9.94	20812	6.4	6845	3.5	866	6.9	8410	3.38	739	3.06	447	3.02	416	5.0	3130	3.45	812	6.2	6245
24,	4.1		4.33		9.64	19404	5.65	4700	3.48	845	6.3	6545	3.26	620	3.01	408	3.0	400	4.85	2822	3.45	812	5.75	4965
25,	3.85		4.33		9.64	19404	5.35	3942	3.4	759	5.6	4570	3.51	877	2.96	371	2.92	342	4.6	2365	3.65	1036	5.55	4442
26,	3.4		4.33		9.7	19680	5.12	3396	3.4	759	5.15	3465	3.51	877	2.98	386	2.9	328	4.35	1967	3.35	708	5.15	3465
27,	3.35		4.33		9.92	20716	4.9	2920	3.4	759	4.85	2822	3.31	877	3.0	400	2.9	328	4.15	1675	3.4	759	4.85	2823
28,	4.1		4.41		9.76	19056	4.7	2540	3.58	956	4.45	2122	3.26	620	2.98	386	2.85	294	3.95	1406	3.45	812	4.65	2453
29,	4.2				9.3	17860	4.6	2365	3.5	866	4.25	1818	3.88	1316	2.95	364	2.8	260	3.75	1156	6.4	6845	6.0	5660
30,	4.4				8.8	15660	4.6	2365	3.5	866	4.05	1538	4.16	1689	2.95	364	2.8	260	3.62	1001	7.3	9740	7.5	10430
31,	4.45				8.15	12910			3.5	866			3.94	1393	2.95	364			3.6	978			6.65	7615

Notes:—River frozen entirely across from Jan. 1st to March 18th, with the exception of a narrow channel near one bank which appeared Feb. 25 and lasted during remainder of the ice period. Gage read to ice surface.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ALLEGHENY RIVER, AT RED HOUSE, N. Y.

1906.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.20	6240	4.55	2280	3.60	978	7.15	9240	4.25	1820	4.75	2630	3.0	400	3.00	400	3.0	400	4.1	1600	5.25	3700	4.2	1740
2,	5.8	5100	4.35	1970	3.6	978	6.8	8090	4.3	1890	4.45	2120	3.0	400	2.95	364	3.0	400	3.75	1160	4.95	3020	4.3	1890
3,	5.25	3700	4.15	1680	3.65	1040	6.25	6400	5.5	4320	4.25	1820	3.1	478	2.9	328	3.05	439	3.5	866	4.9	2920	4.2	1740
4,	5.7	4830	4.2	1740	4.75	2630	6.1	5950	5.25	3700	4.05	1540	3.1	478	2.9	328	3.4	759	3.5	866	4.9	2920	4.0	1470
5,	6.05	5800	4.0	1470	4.75	2630	6.65	7620	5.35	3940	3.85	1280	3.05	439	3.55	922	3.45	812	3.5	866	4.8	2720	4.05	1540
6,	5.5	4320	3.9	1340	4.25	1820	6.75	7930	5.3	3820	4.15	1680	3.1	478	3.3	658	3.3	658	4.0	1470	4.7	2540	5.6	4570
7,	5.2	3580	3.85	1280	4.2	1740	6.7	7770	4.85	2820	4.1	1600	3.1	478	3.3	658	3.05	439	6.0	5660	4.45	2120	8.6	14800
8,	4.8	2720	3.8	1220	4.1	1600	6.25	6400	4.75	2630	3.95	1410	3.0	400	3.6	978	3.0	400	5.85	5240	4.25	1820	7.25	9570
9,	4.55	2280	3.85	1280	4.0	1470	5.95	5520	4.6	2360	3.8	1220	2.9	328	3.6	978	2.9	328	5.5	4320	4.15	1680	6.45	7000
10,	4.3	1890	3.8	1220	3.85	1280	6.65	7620	4.8	2720	3.7	1100	2.9	328	3.7	1100	2.8	260	5.25	3700	4.0	1470	6.15	6100
11,	4.55	2280	3.75	1160	3.8	1220	7.1	9070	4.8	2720	3.65	1040	2.9	328	3.8	1220	2.8	260	5.1	3350	4.1	1600	6.9	8410
12,	4.35	1970	3.8	1220	3.8	1220	6.4	6840	4.7	2540	3.55	922	2.9	328	4.0	1470	2.7	195	5.0	3130	4.2	1740	6.4	6840
13,	4.3	1890	3.65	1040	3.7	1100	6.6	7460	4.55	2280	3.4	759	2.85	294	3.75	1160	2.8	200	5.0	3130	4.35	1970	6.55	7300
14,	4.2	1740	3.7	1100	3.6	978	6.45	7000	4.65	2450	3.3	658	2.8	260	3.5	866	3.0	400	5.4	4060	4.2	1740	6.65	7620
15,	4.15	1680	3.75	1160	3.6	978	6.3	6540	4.75	2630	3.3	658	2.8	260	3.4	759	3.0	400	5.15	3460	4.1	1600	8.8	15700
16,	4.55	2280	3.75	1160	3.6	978	6.45	7000	4.5	2200	3.3	658	2.8	260	3.3	658	3.0	400	4.85	2820	4.0	1470	8.8	15700
17,	4.75	2620	3.65	1040	3.5	866	6.35	6700	5.45	4190	3.3	658	2.8	260	3.15	521	2.9	328	4.55	2280	4.05	1540	6.2	6240
18,	4.7	2540	3.5	866	3.5	866	6.0	5660	5.35	3940	3.3	658	2.8	260	3.0	400	2.8	260	4.3	1890	4.75	2630	6.65	7620
19,	4.6	2360	3.5	866	3.4	759	5.55	4440	4.9	2920	3.6	978	2.8	260	3.1	478	2.8	260	4.2	1740	5.75	4930	6.65	7620
20,	4.6	2360	3.5	866	3.2	564	5.35	3940	4.6	2360	3.45	812	2.85	294	3.1	478	2.8	260	5.0	3130	5.5	4320	6.45	7000
21,	6.5	7150	3.6	978	3.2	564	5.5	4320	4.25	1820	3.4	759	2.9	328	3.9	1340	3.0	400	5.1	3350	6.25	6400	6.45	7000
22,	7.7	11200	3.9	1340	3.2	564	5.1	3350	4.05	1540	3.3	658	2.85	294	4.05	1540	4.0	1470	4.75	2630	6.55	7300	6.45	7000
23,	8.1	12700	3.8	1220	3.1	478	4.7	2540	3.95	1410	3.3	658	2.8	260	3.8	1220	3.75	1160	4.65	2450	5.8	5100	6.45	7000
24,	8.25	13300	3.8	1220	3.0	400	5.3	3820	4.0	1470	3.35	708	2.8	260	3.6	978	3.45	812	4.5	2200	5.35	3940	6.1	5950
25,	7.6	10800	3.7	1100	3.3	658	5.2	3580	4.85	2820	3.2	564	2.8	260	3.55	922	3.3	658	4.8	2720	5.0	3130	a	2180
26,	7.0	8740	3.75	1160	3.4	759	4.85	2820	4.6	2360	3.2	564	2.8	260	3.35	708	3.15	521	5.05	3240	4.75	2630	a	1740
27,	6.5	7150	3.6	978	5.25	3700	4.8	2720	4.7	2540	3.2	564	2.7	195	3.2	564	3.1	478	4.7	2540	4.5	2200	a	1870
28,	5.85	5240	3.50	866	8.4	14000	4.7	2540	5.3	3820	3.1	478	2.7	195	3.2	564	3.0	400	4.5	2200	4.6	2360	a	2800
29,	5.3	3820	------	------	7.3	9740	4.5	2200	5.35	3940	3.1	478	2.8	260	3.2	564	3.0	400	4.95	3020	4.55	2280	a	2330
30,	4.95	3020	------	------	6.9	8410	4.4	2040	5.05	3240	3.0	400	2.8	260	3.1	478	3.55	922	4.5	2200	4.4	2040	a	2030
31,	4.85	2820	------	------	7.75	11300	------	------	5.2	3580	------	------	3.0	400	3.1	478	------	------	5.2	3580	------	------	a	3580

Notes:—Some ice conditions during Feb. and March, no correction applied, error very slight. a Observer sick, no records, discharge estimated from discharge at Kittanning (coef .175).

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ALLEGHENY RIVER, AT RED HOUSE, N. Y.

1907. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	7100	4.25	1820		450	6.40	6840	5.8	5100	4.4	2040	5.5	4320	3.20	560	2.7	145	3.2	560	3.6	978	3.8	1220
2,	------	7100	4.2	1740	3.5	450	5.7	4830	5.6	4570	5.15	3460	5.5	4320	3.2	560	2.7	145	3.1	470	3.6	978	3.8	1220
3,	------	7100	4.2	1740		450	5.3	3820	5.2	3580	6.1	5950	5.3	3820	3.2	560	2.8	220	3.0	380	3.5	866	3.7	1100
4,	------	7100	4.25	1820		450	5.0	3130	6.1	5950	5.5	4320	5.0	3130	3.2	560	2.8	220	5.0	3130	5.2	3580	3.6	978
5,	------	7100	4.25	1820		450	5.0	3130	6.5	7150	5.4	4060	4.5	2200	3.1	470	2.9	295	4.5	2200	5.0	3130	3.5	866
6,	------	7100	3.9	1340		450	4.8	2720	5.8	5100	6.6	7460	4.3	1890	3.0	380	2.8	220	3.9	1340	4.7	2540	3.4	755
7,	------	7100	4.0	1470		450	4.6	2360	5.4	4060	6.3	6540	4.2	1740	3.0	380	2.8	220	4.9	2920	4.5	2200	3.4	755
8,	------	7100	4.1	1600		450	4.5	2200	6.2	6240	5.5	4320	4.1	1600	3.0	380	2.9	295	5.5	4320	5.4	4060	3.3	655
9,	------	7100	3.85	1280	3.2	450	4.6	2360	6.0	5660	5.1	3350	3.9	1340	3.0	380	2.8	220	5.0	3130	5.3	3820	3.5	866
10,	------	7100	3.75	1160	3.2	450	4.5	2200	5.6	4570	4.8	2720	3.8	1220	3.0	380	2.8	220	5.2	3580	4.8	2720	3.7	1100
11,	------	7100		1100	3.3	450	4.5	2200	5.3	3820	4.6	2360	3.6	978	2.9	295	3.0	380	5.2	3580	4.7	2540	5.0	3130
12,	------	7100		1050	3.3	450	4.5	2200	5.1	3350	4.4	2040	5.95	5520	2.9	295	3.3	655	4.9	2920	4.5	2200	5.6	4570
13,	------	7100		1000	3.7	800	4.6	2360	4.9	2920	4.2	1740	5.6	4570	2.9	295	3.2	560	4.8	2720	4.3	1890	5.4	4060
14,	------	7100		950	5.55	4440	4.6	2360	4.6	2360	4.2	1740	4.5	2200	2.9	295	3.1	470	4.7	2540	4.2	1740	5.3	3820
15,	------	7100		900	7.1	9070	4.5	2200	4.4	2040	4.2	1740	4.1	1600	2.8	220	3.0	380	4.5	2200	3.9	1340	5.2	3580
16,	------	7100	3.6	850	7.15	9240	4.4	2040	4.6	2360	3.9	1340	3.9	1340	2.8	220	2.9	295	4.5	2200	3.8	1220	4.8	2720
17,	5.10	3350		850	7.55	10600	4.4	2040	4.7	2540	3.8	1220	3.8	1220	2.8	220	2.9	295	4.8	2720	3.8	1220	4.7	2540
18,	4.95	3020		850	7.8	11500	4.3	1890	4.6	2360	3.7	1100	3.8	1220	2.8	220	2.9	295	4.7	2540	3.7	1100	4.3	1890
19,	5.3	3820		850	7.6	10800	4.2	1740	4.6	2360	3.7	1100	3.6	978	2.8	220	3.0	380	4.5	2200	3.8	1220	4.2	1740
20,	7.1	9070		450	7.9	11900	4.2	1740	5.5	4320	3.7	1100	3.5	866	2.8	220	3.0	380	4.4	2040	3.7	1100	4.2	1740
21,	6.9	8410		450	7.5	10400	4.1	1600	5.6	4570	3.7	1100	3.4	755	2.9	295	3.1	470	5.0	3130	3.7	1100	4.0	1470
22,	6.15	6100		450	7.1	9070	4.0	1470	5.3	3820	3.7	1100	3.4	755	2.8	220	3.0	380	4.9	2920	3.6	978	4.5	2200
23,	5.8	5100	3.2	450	7.7	11200	3.9	1340	5.0	3130	4.4	2040	3.3	655	2.8	220	3.0	380	4.7	2540	3.7	1100	5.6	4570
24	5.25	3700		450	7.7	11200	6.85	8250	4.7	2540	5.1	3350	3.3	655	2.8	220	3.0	380	4.3	1890	3.7	1100	5.5	4320
25,	5.2	3580		400	7.4	10100	7.3	9740	4.5	2200	5.0	3130	3.3	655	2.8	220	3.0	380	4.0	1470	3.6	978	5.0	3130
26,	5.1	3350		400	7.1	9070	7.4	10100	4.4	2040	5.0	3130	3.3	655	2.8	220	2.9	295	3.8	1220	3.5	866	4.8	2720
27	4.95	3020		400	7.5	10400	7.7	11200	5.6	4570	4.6	2360	3.5	866	2.8	220	2.9	295	3.6	978	3.6	978	5.6	4570
28,	4.55	2280		400	8.35	13800	7.1	9070	5.9	5380	4.3	1890	3.4	755	2.8	220	2.9	295	4.0	1470	3.7	1100	7.9	11900
29,	4.5	2200	------	------	7.95	12100	6.6	7460	5.3	3820	4.1	1600	3.2	560	2.7	145	3.5	866	3.8	1220	3.8	1220	7.5	10400
30,	4.4	2040	------	------	7.35	9910	6.2	6240	4.9	2920	4.2	1740	3.2	560	2.7	145	3.4	755	3.8	1220	4.0	1470	7.2	9400
31,	4.20	1740	------	------	6.8	8090	------	------	4.6	2360	----	------	3.1	470	2.7	145	------	------	3.7	1100	------	------	6.8	8090

Notes:—No gage heights January 1-16 on account of death of observer. Ice condition Feb. 11-Mar, 14.
Discharge estimated on basis of Kittanning and Binghamton stations.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ALLEGHENY RIVER, AT RED HOUSE, N. Y.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.4	6840	4.0	1000	5.3	3820	8.0	12300	5.1	3350	6.2	6240	3.7	1100	3.5	866	3.0	380	2.7	145	2.7	145	2.7	145
2,	6.1	5950		700	5.4	4060	7.6	10800	6.0	5660	6.0	5660	3.6	978	3.5	866	3.0	380	2.8	220	2.7	145	2.7	145
3,	5.9	5380		700	5.6	4570	7.4	10100	6.5	7150	5.5	4320	3.6	978	3.5	866	2.9	295	2.8	220	2.7	145	2.7	145
4,	5.7	4830		700	6.4	6840	7.0	8740	6.5	7150	5.1	3350	4.8	2720	3.5	866	2.9	295	2.8	220	2.7	145		100
5,	5.4	4060		700	6.3	6540	6.8	8090	6.3	6540	4.8	2720	4.0	1470	3.4	755	2.9	295	2.7	145	2.8	220	2.7	100
6,	5.1	3350		700	6.3	6540	6.5	7150	6.4	6840	4.6	2360	3.8	1220	3.4	755	2.9	295	2.7	145	2.8	220		100
7,	4.8	2730		700	6.2	6240	6.3	6540	7.2	9400	4.5	2200	3.7	1100	3.4	755	2.8	220	2.7	145	2.8	220		100
8,	4.6	2360	*4.20	500	6.2	6240	6.4	6840	8.1	12700	4.4	2040	3.6	978	3.4	755	2.8	220	2.7	145	2.7	145		100
9,	4.5	2200		500	6.0	5660	6.4	6840	7.9	11900	4.2	1740	3.4	755	3.4	755	2.8	220	2.7	145	2.7	145		100
10,	4.5	2200		500	5.8	5100	6.3	6540	7.6	10800	4.0	1470	3.3	655	3.3	655	2.8	220	2.7	145	2.7	145		100
11	4.4	2040		500	5.4	4060	6.3	6540	7.0	8740	3.9	1340	3.2	560	3.3	655	2.7	145	2.7	145	2.8	220		100
12,	5.0	3130		500	5.8	5100	6.2	6240	6.4	6840	3.8	1220	3.2	560	3.3	655	2.7	145	2.7	145	2.8	220	2.7	100
13,	6.3	6540		500	6.2	6240	5.0	3130	6.0	5660	3.6	978	3.1	470	3.3	655	2.7	145	2.7	145	2.8	220		100
14,	5.7	4830		2000	6.3	6540	4.9	2920	5.6	4570	3.5	866	3.1	470	3.3	655	2.7	145	2.7	145	2.9	295		100
15,	5.3	3820	10.20	22100	7.8	11500	4.9	2920	5.8	5100	5.65	4700	3.0	380	3.2	560	2.7	145	2.7	145	2.8	220		100
16,	5.0	3130	10.8	25100	11.2	27300	5.1	3350	6.4	6840	5.5	4320	3.0	380	3.2	560	2.7	145	2.7	145	2.8	220		100
17,	4.9	2920	9.1	17000	10.0	21100	4.9	2920	6.6	7460	4.5	2200	3.0	380	4.1	1600	2.7	145	2.7	145	2.9	295		150
18,	4.8	2720	8.9	16100	8.9	16100	4.9	2920	6.4	6840	3.8	1220	3.1	470	4.3	1890	2.7	145	2.7	145	2.9	295		500
19,	4.7	2540	8.3	13500	8.5	14400	5.3	3820	6.2	6240	3.7	1100	3.1	470	3.9	1340	2.7	145	2.7	145	3.0	380	3.7	800
20,	4.6	2360	7.8	11500	9.5	18800	7.3	9740	6.0	5660	3.6	978	3.0	380	3.4	755	2.7	145	2.7	145	3.0	380		500
21,	4.6	2360	7.4	10100	8.5	14400	6.4	6840	6.0	5660	3.5	866	3.5	866	3.3	655	2.7	145	2.7	145	3.0	380		500
22,	4.5	2200	7.0	8740	8.0	12300	6.0	5660	5.6	4570	3.5	866	3.8	1220	3.3	655	2.7	145	2.7	145	3.0	380		500
23,	4.5	2200	6.6	7460	7.4	10100	5.9	5380	5.4	4060	3.8	1220	4.0	1470	3.3	655	2.7	145	2.7	145	2.9	295		500
24,	4.4	2040	6.2	6240	6.9	8410	5.8	5100	5.1	3350	6.25	6400	4.8	2720	3.2	560	2.7	145	2.7	145	2.9	295		300
25,	4.3	1890	5.9	5380	6.5	7150	5.7	4830	5.0	3130	5.6	4570	5.0	3130	3.2	560	2.7	145	2.7	145	2.9	295		300
26		1700	5.7	4830	7.2	9400	5.5	4320	5.2	3580	4.5	2200	5.7	4830	3.2	560	2.7	145	2.7	145	2.9	295	3.4	500
27,		1600	5.6	4570	7.5	10400	5.3	3820	5.6	4570	4.0	1470	5.0	3130	3.1	470	2.7	145	2.7	145	2.8	220	3.6	978
28,		1500	5.4	4060	8.6	14800	5.2	3580	5.6	4570	3.8	1220	4.5	2200	3.1	470	2.7	145	2.7	145	2.8	220	3.7	1100
29,		1300	5.4	4060	8.6	14800	5.1	3350	6.0	5660	3.7	1100	4.1	1600	3.1	470	2.7	145	2.7	145	2.8	220	3.7	1100
30,		1200	------	------	9.0	16500	5.0	3130	6.0	5660	3.7	1100	3.8	1220	3.0	380	2.7	145	2.7	145	2.8	220	3.6	978
31,		1100	------	------	8.6	14800	------	------	6.2	6240	------	------	3.6	978	3.0	380	------	------	2.7	145	------	------	3.8	1220

Notes:—Ice condition Jan. 26-Feb. 14 and Dec. 3-25, discharge estimated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ALLEGHENY RIVER, AT RED HOUSE, N. Y.

1909. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.53	900	4.33	1940	7.33	9840	5.33	3890	11.93	31300	4.13	1650	3.93	1380	2.93	320	2.83	242	2.83	242	3.23	588	3.33	685
2,	3.43	788	4.23	1790	7.43	10200	5.13	3420	12.53	34600	3.93	1380	3.83	1250	2.93	320	2.83	242	2.83	242	3.23	588	3.33	685
3,	3.33	685	4.13	1650	6.93	8510	4.93	2980	11.38	28300	3.83	1250	3.73	1130	2.93	320	2.83	242	2.73	168	3.13	497	3.23	588
4,	3.43	788	5.43	4140	6.23	6340	5.73	4910	9.88	20500	3.83	1250	3.73	1130	2.83	242	2.83	242	2.73	168	3.13	497	3.23	588
5,	5.93	5460	6.13	6040	5.43	4140	5.53	4390	8.83	15800	3.93	1380	3.63	1010	2.83	242	2.83	242	2.73	168	3.13	497	3.23	588
6,	8.23	13200	8.03	12400	4.83	2780	5.43	4140	7.63	10900	5.53	4390	3.63	1010	2.83	242	2.83	242	2.73	168	3.13	497	3.23	588
7,	7.93	12000	7.53	10500	4.73	2600	5.73	4910	6.53	7240	5.83	5180	3.53	900	2.83	242	2.73	168	2.73	168	3.03	407	3.23	588
8,	5.93	5460	6.73	7870	4.73	2600	5.93	5460	6.03	5750	5.43	4140	3.43	788	2.83	242	2.73	168	2.73	168	3.13	497	3.33	685
9,	4.94	3000	5.93	5460	4.63	2420	5.83	5180	5.63	4650	5.23	3650	3.33	685	2.83	242	2.73	168	2.73	168	3.23	588	3.33	685
10,	4.73	2600	5.63	4650	4.93	2980	6.13	6040	5.23	3650	5.33	3890	3.33	685	2.83	242	2.73	168	2.73	168	3.23	588	3.23	588
11,	4.63	2420	5.63	4650	6.43	6940	5.53	4390	5.23	3650	5.73	4910	3.23	588	2.83	242	2.73	168	2.93	320	3.43	788	3.43	788
12,	4.53	2250	5.13	3420	6.33	6640	5.33	3890	5.63	4650	5.33	3890	3.13	497	2.83	242	2.73	168	3.73	1130	3.33	685	3.43	788
13,	4.43	2090	4.93	2980	5.93	5460	5.33	3890	5.43	4140	5.03	3200	3.03	407	2.83	242	2.73	168	3.53	900	3.23	588	3.53	900
14,	4.53	2250	4.93	2980	5.63	4650	6.13	6040	5.33	3890	5.13	3420	3.03	407	2.83	242	2.73	168	3.13	497	3.23	588	3.73	1130
15,	4.33	1940	5.43	4140	5.23	3650	6.73	7870	5.23	3650	4.93	2980	2.93	320	2.83	242	2.73	168	2.93	320	3.23	588	3.73	1130
16,	4.23	1790	8.13	12800	4.93	2980	6.03	5750	5.93	5460	4.73	2600	2.93	320	2.83	242	2.73	168	2.93	320	3.23	588	3.73	1000
17,	4.23	1790	7.53	10500	4.73	2600	5.53	4390	6.13	6040	4.63	2420	2.83	242	2.93	320	2.73	168	3.03	407	3.33	685		800
18,	4.03	1510	6.83	8190	4.63	2420	5.43	4140	6.03	5750	4.63	2420	2.83	242	2.93	320	2.73	168	2.93	320	3.33	685	3.80	700
19,	4.03	1510	7.13	9170	4.53	2250	5.33	3890	5.73	4910	4.53	2250	2.83	242	2.93	320	2.73	168	3.03	407	3.33	685		700
20,	3.93	1380	7.33	9840	4.53	2250	6.03	5750	5.43	4140	4.53	2250	2.93	320	2.83	242	2.73	168	3.23	588	3.43	788		600
21,	3.83	1250	6.73	7870	4.43	2090	6.43	6940	5.23	3650	4.73	2600	2.93	320	2.83	242	2.73	168	3.43	788	3.53	900		600
22,	3.93	1380	6.33	6640	4.33	1940	6.13	6040	4.93	2980	5.13	3420	3.03	407	2.83	242	2.73	168	3.83	1250	3.93	1380		500
23,	5.73	4910	6.73	7870	4.33	1940	5.83	5180	4.83	2780	5.13	3420	3.13	497	2.83	242	2.73	168	3.73	1130	4.53	2250	3.80	500
24,	7.43	10200	8.78	15600	4.93	2980	5.63	4650	4.53	2250	5.03	3200	3.23	588	2.83	242	2.73	168	3.63	1010	4.43	2090		500
25,	8.13	12800	9.63	19400	7.83	11600	5.33	3890	4.33	1940	5.03	3200	3.13	497	2.83	242	2.73	168	3.63	1010	4.43	2090		500
26,	7.23	9500	8.93	16200	7.93	12000	5.43	4140	4.23	1790	4.93	2980	3.13	497	2.83	242	2.73	168	3.53	900	3.93	1380		500
27,	6.73	7870	8.33	13700	6.93	8510	5.43	4140	4.03	1510	4.73	2600	3.13	497	2.83	242	2.73	168	3.53	900	3.93	1380		450
28,	5.93	5460	7.83	11600	6.33	6640	5.43	4140	3.93	1380	4.63	2420	3.03	407	2.83	242	2.73	168	3.43	788	3.83	1250		400
29,	5.43	4140	------	------	5.73	4910	5.33	3890	4.23	1790	4.33	1940	3.03	407	2.83	242	2.73	168	3.33	685	3.53	900		400
30,	4.93	2980	------	------	5.63	4650	10.73	24800	4.23	1790	4.13	1650	3.03	407	2.83	242	2.83	242	3.33	685	3.43	788		400
31,	4.53	2250	------	------	5.43	4140	------	------	4.13	1650	------	------	2.93	320	2.83	242	------	------	3.33	685	------	------	3.80	400

Notes:—Ice conditions December 16-31. Discharge estimated on the basis of discharge from adjacent drainages.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ALLEGHENY RIVER, AT RED HOUSE, N. Y.

1910. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.0	------	------	------	10.5	23600	5.0	3130	7.0	8740	4.5	2200	3.0	320	3.0	320	3.02	337	3.1	405	4.35	1970	5.0	3130
2,	------	------	------	------	13.6	41000	5.0	3130	7.0	8740	4.5	2200	3.0	320	3.0	320	3.12	424	3.1	405	4.4	2040	4.9	2920
3,	------	------	------	------	11.4	28400	5.0	3130	7.5	10400	4.5	2200	3.0	320	2.8	190	3.2	500	3.1	405	4.5	2200	4.85	2820
4,	------	------	------	------	11.0	26200	4.8	2720	8.0	12300	4.5	2200	3.0	320	2.75	168	3.35	655	3.02	337	4.6	2360	4.6	2360
5,	------	------	5.0	------	10.9	25600	4.5	2200	8.0	12300	4.5	2200	3.0	320	2.7	145	3.8	1200	2.98	306	4.55	2280	4.55	2280
6,	------	------	------	------	10.3	22600	4.5	2200	7.0	8740	4.5	2200	3.0	320	2.7	145	5.5	4320	3.27	570	4.45	2120	4.4	2040
7,	------	------	------	------	10.5	23600	4.5	2200	7.0	8740	4.5	2200	3.0	320	2.7	145	5.62	4620	3.88	1310	4.25	1820	4.2	1750
8,	4.0	------	------	------	9.5	18800	4.5	2200	7.0	8740	4.5	2200	3.0	320	2.7	145	4.8	2720	3.8	1200	4.0	1470	4.1	1610
9,	------	------	------	------	9.1	17000	4.2	1750	7.0	8740	4.5	2200	3.0	320	2.7	145	4.4	2040	3.61	958	3.9	1340	4.0	1470
10,	------	------	------	------	9.0	16500	4.0	1470	6.5	7150	4.0	1470	3.0	320	3.0	320	4.12	1640	3.4	710	4.4	2040	4.0	1470
11,	------	------	------	------	9.0	16500	4.0	1470	6.5	7150	4.0	1470	3.5	825	3.1	405	3.8	1200	3.28	580	5.7	4830	3.95	1400
12,	------	------	4.5	------	8.8	15700	4.0	1470	6.0	5660	4.0	1470	3.5	825	3.1	405	3.6	945	3.2	500	5.5	4320	3.95	1200
13,	------	------	------	------	8.0	12300	4.1	1610	6.0	5660	4.0	1470	3.5	825	3.0	320	3.52	849	3.05	362	4.6	2360	3.9	1000
14,	------	------	------	------	7.4	10100	4.1	1610	6.0	5660	4.0	1470	4.0	1470	3.0	320	3.4	710	3.0	320	4.9	2920	3.9	800
15,	4.0	------	------	------	6.0	5660	3.8	1200	5.5	4320	4.0	1470	4.0	1470	2.9	250	3.32	622	3.0	320	4.9	2920	3.9	700
16,	------	------	------	------	5.6	4570	3.6	945	5.5	4320	3.5	825	4.0	1470	2.9	250	3.18	481	3.0	320	4.8	2720	3.95	600
17,	------	------	------	------	5.5	4320	3.6	945	5.0	3130	3.5	825	4.0	1470	2.9	250	3.15	452	3.0	320	4.75	2630	3.95	500
18,	------	------	------	------	5.5	4320	3.8	1200	4.0	1470	3.5	825	3.5	825	2.9	250	3.1	405	3.0	320	4.6	2360	3.95	400
19,	------	------	4.5	------	5.4	4060	3.8	1200	4.0	1470	4.0	1470	3.5	825	3.0	320	3.1	405	3.05	362	4.65	2450	3.95	400
20,	------	------	------	------	6.0	5660	5.0	3130	4.0	1470	4.0	1470	3.5	825	3.0	320	3.05	362	3.0	320	4.5	2200	3.95	400
21,	------	------	------	------	6.6	7460	6.2	6240	4.0	1470	4.0	1470	3.5	825	3.0	320	3.0	320	3.02	337	4.45	2120	3.95	400
22,	5.0	------	------	------	7.0	8740	6.4	6840	4.0	1470	3.5	825	3.5	825	2.9	250	3.0	320	2.92	264	4.4	2040	3.95	500
23,	------	------	------	------	7.0	8740	6.6	7460	4.0	1470	3.5	825	3.5	825	3.0	320	2.9	250	3.1	405	4.7	2540	3.95	500
24,	------	------	------	------	7.1	9070	7.4	10100	4.5	2200	3.5	825	3.05	362	3.2	500	3.01	328	3.25	550	5.35	3940	3.95	600
25,	------	------	------	------	7.1	9070	8.0	12300	4.5	2200	3.5	825	3.05	362	3.3	600	3.32	622	3.4	710	5.5	4320	3.95	600
26,	------	------	5.0	------	7.3	9740	9.2	17400	4.0	1470	3.0	320	3.0	320	3.2	500	3.4	710	3.6	945	5.65	4700	4.0	1000
27,	------	------	8.1	10800	7.3	9740	9.0	16500	4.0	1470	3.0	320	3.0	320	3.2	500	3.5	825	3.8	1200	5.6	4570	4.2	1750
28,	------	------	9.1	17000	7.2	9400	8.5	14400	4.0	1470	3.0	320	3.0	320	3.2	500	3.4	710	4.1	1610	5.8	5100	4.4	2040
29,	4.9	------	------	------	7.2	9400	8.2	13100	4.0	1470	3.0	320	3.05	362	3.2	500	3.3	600	4.35	1970	5.5	4320	4.55	2280
30,	------	------	------	------	7.0	8740	8.6	14800	4.0	1470	3.0	320	3.05	362	3.15	452	3.25	550	4.35	1970	5.3	3820	6.5	7150
31,	------	------	------	------	6.5	7150	------	------	4.5	2200	------	------	3.05	362	3.0	320	------	------	4.25	1820	------	------	7.3	9740

Note:—Relation of gage height to discharge affected by ice about January 1 to February 27, and about December 12 to 26, 1910. Daily discharge determined by means of a discharge rating curve that is well defined. Discharge December 12 to 26, estimated by means of climatologic records, the discharge at Kittanning and in adjacent drainage areas. Discharge February 27, estimated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ALLEGHENY RIVER, AT RED HOUSE, N. Y.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.4	6840	6.3	6540	4.8	2720	5.6	4570	5.2	3580	3.6	945	3.7	1070	2.95	285	4.4	2040	5.2	3580	4.25	1820	5.3	3820
2,	7.1	9070	5.7	4830	4.7	2540	5.2	3580	5.2	3580	3.65	1010	3.5	825	3.05	362	4.4	2040	6.6	7460	4.2	1750	5.5	4320
3,	8.8	15700	5.4	4060	4.6	2360	4.9	2920	5.4	4060	3.6	945	3.35	655	3.0	320	4.6	2360	6.4	6840	4.5	2200	5.2	3580
4,	8.1	12700	5.2	3580	4.5	2200	5.0	3130	5.2	3580	3.55	885	3.2	500	3.0	320	4.6	2360	6.3	6540	4.25	1820	4.7	2540
5,	7.4	10100	4.1	1610	4.25	1820	6.2	6240	4.9	2920	3.55	885	3.2	500	3.1	405	4.6	2360	6.1	5950	4.8	2720	4.5	2200
6,	6.8	8090	4.1	1610	4.0	1470	6.8	8090	4.8	2720	3.6	945	3.2	500	3.35	655	5.8	5100	5.4	4060	5.0	3130	4.45	2120
7,	5.7	4830	4.2	1750	4.0	1470	8.0	12300	4.8	2720	3.5	825	3.05	362	3.85	1270	6.0	5660	4.8	2720	5.2	3580	4.45	2120
8,	5.4	4060	4.25	1820	4.2	1750	8.1	12700	4.5	2200	3.45	768	3.05	362	3.4	710	5.9	5380	4.6	2360	5.3	3820	4.3	1900
9,	5.6	4570	4.4	2040	4.8	2720	7.1	11200	4.2	1760	3.4	710	3.25	550	3.25	550	5.6	4570	4.6	2360	5.4	4060	4.6	2360
10,	6.0	5660	4.3	1900	5.0	3130	7.2	9400	4.25	1820	3.35	655	3.2	500	3.2	500	6.6	7460	4.6	2360	5.4	4060	4.7	2540
11,	6.5	7150	4.3	1900	5.2	3580	6.6	7460	4.25	1820	4.2	1750	3.2	500	3.0	320	5.6	4570	4.45	2120	5.8	5100	4.8	2720
12,	6.9	8410	4.0	1470	5.6	4570	6.6	7400	3.9	1840	4.8	2720	3.45	768	2.9	250	5.4	4060	4.6	2360	5.6	4570	5.2	3580
13,	7.2	9400	4.05	1540	5.7	4830	6.4	6840	3.8	1200	5.6	4570	3.4	718	3.1	405	5.0	3130	4.6	2360	5.6	4570	7.1	9070
14,	8.0	12300	4.1	1610	5.8	5100	6.2	6240	3.75	1140	5.7	4830	3.45	768	3.25	550	4.5	2200	4.6	2360	5.8	5100	7.4	10160
15,	8.6	14800	4.8	2720	6.3	6540	6.2	6240	3.7	1070	5.3	3820	3.3	600	3.15	452	4.45	2120	4.7	2540	5.7	4830	7.0	8740
16,	8.2	13100	5.1	3350	6.2	6240	6.0	5660	3.7	1070	4.9	2920	3.2	500	3.6	945	4.6	2360	4.8	2720	5.9	5380	6.9	8410
17,	7.5	10400	5.9	5380	5.4	4060	5.8	5100	3.85	1270	4.3	1900	3.15	452	3.55	885	4.25	1820	4.8	2720	6.6	7460	6.0	5660
18,	6.8	8090	6.2	6240	5.2	3580	5.5	4320	3.85	1270	4.1	1610	3.15	452	3.55	885	4.2	1750	4.7	2540	6.7	7770	5.9	5380
19,	6.5	7150	5.8	5100	5.3	3820	5.5	4320	3.8	1200	3.35	655	3.1	405	3.55	885	4.1	1610	4.6	2360	6.6	7460	4.7	2540
20,	6.2	6240	5.4	4060	5.4	4060	5.5	4320	3.95	1400	3.3	600	3.1	405	3.15	452	4.15	1680	4.5	2200	6.0	5660	4.3	2360
21,	6.0	5000	4.9	2920	5.2	3580	5.8	5100	3.85	1270	3.3	600	3.0	320	3.15	452	3.9	1340	4.2	1750	5.3	3820	5.2	3580
22,	5.6	3700	5.0	2000	5.2	3580	6.2	6240	3.7	1070	3.55	885	3.0	320	3.3	600	3.55	885	4.2	1750	5.3	3820	5.0	3130
23,	5.2	2500	5.0	1500	6.2	6240	6.0	5660	3.6	945	3.5	825	3.1	405	3.35	655	3.55	885	4.25	1820	5.0	3130	5.1	3350
24,	4.0	1470	5.0	1200	5.6	4570	5.7	4830	3.85	1270	3.6	945	3.0	320	3.2	500	3.6	945	4.25	1820	5.2	3580	5.2	3580
25,	5.2	2500	5.0	1200	5.2	3580	5.6	4570	4.75	2630	3.65	1010	3.0	320	3.25	550	3.65	1010	4.1	1610	5.4	4060	5.0	3130
26,	6.6	5000	4.9	1800	5.6	4570	5.2	3580	5.3	3820	3.6	945	3.0	320	3.35	655	3.65	1010	4.0	1470	5.0	3130	4.8	2720
27,	6.8	8090	5.0	2500	6.2	6240	5.2	3580	4.8	2720	3.95	1400	2.9	250	3.85	1270	3.75	1140	4.0	1470	4.9	2920	4.6	2360
28,	9.2	17400	4.9	2920	8.1	12700	5.0	3130	4.0	1470	4.3	1900	2.95	285	6.4	6840	3.8	1200	3.9	1340	4.9	2920	4.7	2540
29,	8.2	13100	------	------	7.8	11530	4.8	2720	3.85	1270	3.8	1200	2.8	190	8.6	14800	3.8	1200	3.95	1400	5.4	4060	5.3	3820
30,	7.6	10800	------	------	6.6	7460	4.8	2720	3.8	1200	3.65	1010	2.9	250	7.0	8740	5.3	3820	3.95	1400	5.6	4570	5.6	4570
31,	7.0	8740	------	------	5.8	5100	------	------	3.8	1200	------	------	2.9	250	5.4	4060	------	------	4.1	1610	------	------	5.4	4060

Note:—The extent of effect from ice during January, February and March is very uncertain. It is quite probable that the relation of gage height to discharge was affected by ice January 21 to 26 and February 22 to 27, and, also, more or less for other short periods from about January 9 to March 10, Daily discharge determined from a well defined discharge rating curve. Discharge has been applied from the open-channel rating for January, February and March, except January 21 to 26 and February 22 to 27, which were estimated by means of climatologic records, the discharge at Kittanning and the discharge from adjacent drainage areas. Daily discharge for these three months, particularly at low stages, is uncertain.

ESTIMATED MONTHLY DISCHARGE OF ALLEGHENY RIVER, AT RED HOUSE, N. Y.

(Drainage area, 1,640 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1903.*					
September (4th-30th),	3,130	708	1.462	0.890	----------
October,	8,905	708	2,262	1.38	----------
November,	12,105	978	2,918	1.78	----------
December (1st-25th),	1,818	866	1,337	.814	----------
1904.*					
March (16th-31),	26,750	2,565	----------	----------	----------
April,	13,750	2,764	6,945	4.23	----------
May,	10,430	1,341	3,927	2.39	----------
June,	9,808	564	2,134	1.30	----------
July,	5,805	611	1,557	.948	----------
August,	2,043	400	707	.485	----------
September,	2,632	400	914	.556	----------
October,	3,350	1,072	1,985	1.21	----------
November (1st-27th),	1,341	611	839	.511	----------
December (27th-31st),	12,500	----------	----------	----------	----------
1905.*					
March (19-31),	29,885	----------	----------	----------	----------
April,	10,980	2,200	3,734	2.27	----------
May,	2,122	759	1,241	.755	----------
June,	9,334	658	2,905	1.77	----------
July,	5,238	620	1,992	1.21	----------
August,	1,228	364	640	.390	----------
September,	1,119	260	496	.302	----------
October,	3,130	208	1,269	.772	----------
November,	9,740	708	2,201	1.34	----------
December,	10,430	866	4,275	2.60	----------
1906.					
January,	13,300	1,680	4,780	2.91	3.36
February (a),	2,280	866	1,240	.756	.79
March (a),	14,000	400	2,460	1.50	1.73
April,	9,240	2,040	5,570	3.40	3.79
May,	4,320	1,410	2,800	1.71	1.97
June,	2,630	400	1,000	.610	.68
July,	478	195	322	.196	.23
August,	1,540	328	777	.474	.55
September,	1,470	195	505	.308	.34
October,	5,660	866	2,740	1.67	1.92
November,	7,300	1,470	2,860	1.74	1.94
December (b),	15,700	1,470	5,930	3.62	4.17
The year,	15,700	195	2,580	1.57	21.47

*No estimates for frozen period.

(a) No correction on account of ice conditions was made in values for February and March, and they may be a few per cent. too high.

(b) Daily discharge, December 25-31, determined, approximately, by comparison of flow at this station with the flow at Kittanning, Pa.

ESTIMATED MONTHLY DISCHARGE OF ALLEGHENY RIVER, AT RED HOUSE, N. Y.

(Drainage area 1,640 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a 1907.					
January,	-----------	1,740	5,630	3.43	3.95
February,	1,820	*400	1,000	.61	.64
March,	13,800	*450	6,100	3.72	4.29
April,	11,200	1,340	4,030	2.46	2.74
May,	7,150	2,040	3,800	2.32	2.68
June,	7,460	1,100	2,700	1.65	1.84
July,	5,520	470	1,720	1.05	1.21
August,	560	145	303	.18	.21
September,	866	145	360	.22	.25
October,	4,320	380	2,160	1.32	1.52
November,	4,060	866	1,710	1.04	1.16
December,	11,900	655	3,290	2.01	2.32
The year,	13,800	145	2,730	1.67	22.81
b 1908.					
January,	6,840	*1,100	3,000	1.83	2.11
February,	25,100	*500	5,890	3.59	3.87
March,	27,300	3,820	10,300	6.28	7.24
April,	12,300	2,920	5,820	3.55	3.96
May,	12,700	3,130	6,340	3.87	4.46
June,	6,240	866	2,400	1.46	1.63
July,	4,830	380	1,290	.79	.91
August,	1,890	380	743	.45	.52
September,	380	145	191	.12	.13
October,	220	145	152	.09	.11
November,	380	145	241	.15	.16
December,	1,220	*100	376	.23	.26
The year,	27,300	*100	3,060	1.87	25.36
1909.					
January,	13,200	685	4,080	2.49	2.87
February,	19,400	1,650	8,000	4.88	5.08
March,	12,000	1,940	4,960	3.02	3.48
April,	24,800	2,980	5,440	3.32	3.70
May,	34,600	1,380	7,500	4.57	5.27
June,	5,180	1,250	2,860	1.74	1.94
July,	1,380	242	593	.362	.42
August,	320	242	257	.157	.18
September,	242	168	185	.113	.13
October,	1,250	168	544	.332	.38
November,	2,250	407	877	.535	.60
December,	1,130	400	644	.393	.45
The year,	34,600	168	3,000	1.83	24.50

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a Discharge during frozen period based on discharge of Allegheny river at Kittanning, Pa., drainages in the Susquehanna River basin, and climatological reports. Discharge January 1-16, based on discharge of Allegheny River at Kittanning, Pa.: and Susquehanna River at Binghamton, N. Y. Discharge January 1-16, 7,100 second-feet; February 11-28, 681 second-feet; March 1-13, 477 second-feet.

*Ice conditions: only roughly approximate.

b Discharge during the frozen periods estimated on the basis of the discharge of Allegheny River at Kittanning, Pa., Susquehanna River drainages and climatological reports. Discharge January 26-31, 1400 second-feet; February 1-14, 708 second-feet; December 4-26, 288 second-feet.

ESTIMATED MONTHLY DISCHARGE OF ALLEGHENY RIVER, AT RED HOUSE, N. Y.

(Drainage area 1,640 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a 1910.					
January,			2,500	1.52	1.75
February,	17,000		2,200	1.35	1.40
March,	41,000	4,060	13,700	8.35	9.63
April,	17,400	945	5,270	3.21	3.58
May,	12,300	1,470	4,940	3.01	3.47
June,	2,200	320	1,350	.823	92
July,	1,470	320	622	.379	.44
August,	600	145	319	.195	.22
September,	4,620	250	1,000	.610	.68
October,	1,970	264	713	.435	.50
November,	5,100	1,340	2,890	1.76	1.96
December,	9,740	400	1,800	1.10	1.27
The year,	41,000	145	3,109	1.895	25.82
1911.					
January,	17,400	1,470	8,290	5.05	5.82
February,	6,540	1,200	2,820	1.72	1.79
March,	12,700	1,470	4,440	2.71	3.12
April,	12,700	2,720	5,810	3.54	3.95
May,	4,060	945	1,950	1.19	1.37
June,	4,830	600	1,480	.902	1.01
July,	1,070	190	471	.287	.33
August,	14,800	250	1,630	.994	1.15
September,	7,460	885	2,600	1.59	1.77
October,	7,460	1,340	2,770	1.69	1.95
November,	7,770	1,750	4,100	2.50	2.79
December,	10,100	1,900	3,960	2.41	2.78
The year,	17,400	190	3,360	2.049	27.83

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a Discharge January 1 to February 26 estimated by means of climatologic records and the discharge at Kittanning and in adjacent drainage areas. Mean discharge February 1 to 26 estimated 1,300 second-feet.

CONEWANGO CREEK.

DESCRIPTION OF BASIN.

Conewango creek is one of the largest tributaries of the Allegheny river, draining a total area of approximately 825 square miles, 688 of which lie in New York State. Rising in the western part of Callaiagus county, N. Y., it flows southwardly across the New York-Pennsylvania State line in Warren county, about 10 miles west of where the Allegheny river crosses. Its source and all of its basin lies in the once glaciated region, abounding in lakes, ponds and marshes, the country being rolling and largely deforested, under cultivation and well inhabited. The valleys are broad and flat. The Chautauqua Lake in New York lies on a tributary of Cassadoga creek, and below its junction the valley is very particularly flat, and the stream very sluggish.

The mean annual precipitation over this watershed is from 40 to 45 inches.

The discharge has been measured since October, 1909, at Frewsburg, New York.

OHIO BASIN—STATION NO. 2.

CONEWANGO CREEK AT FREWSBURG, N. Y.

DESCRIPTION OF STATION

This station was established by the Water Supply Commission of Pennsylvania, in cooperation with the Flood Commission of Pittsburgh, on October 25th, 1909, at Whitman's bridge, one mile above Frewsburg and 18 miles above the mouth.

The channel is straight for 75 feet above the station, when it makes a bend to the left, while the channel below the station is straight for 600 feet. The right bank is a wide, low meadow and overflows at high stages. The left bank is the railroad embankment and does not overflow. The bed is of clay and gravel and is somewhat shifting. On the right bank a one hundred foot trestle approach to the railroad bridge passes water around that end during floods, while other flood waters get through the embankment, on the right bank some distance from the bridge, by a culvert, where it is measured.

Discharge measurements are made from the down-stream side of the highway bridge and from the railroad bridge 75 feet below during extreme floods. The initial point for soundings on the highway bridge is centre of hand-rail post, left end of bridge, looking downstream.

A chain gage is attached on the railroad bridge near the left bank. The length of chain from the bottom of the weight to the centre of the marker is 22.68 feet. The elevation of zero is arbitrary datum. Bench-mark No. 1 is the outer down-stream corner of coping stone of left abutment, down-stream wing-wall; elevation, 19.87 feet above gage datum. The gage is read twice daily by Lester Hobart.

On account of slack water from numerous mill dams there is no point on the stream nearer the mouth where a gaging station is available.

Since the establishment of this station eleven discharge measurements have been made. Owing to an insufficient number of discharge measurements no rating curve has been computed and only the discharge measurements and gage heights have been published.

DISCHARGE MEASUREMENTS, CONEWANGO CREEK, NEAR FREWSBURG, CHAUTAUQUA COUNTY, N. Y.

(Drainage area 690 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.	
	1910.							
1	Mar. 7,	Wheelock,	------	2993	3.18	14.14	9517	From R. R. bridge.
2	Mar. 9,	Wheelock,	------	2850	3.17	13.67	9046	From R. R. bridge.
3	Mar. 11,	Wheelock,	------	2458	2.54	12.17	6236	From R. R. bridge.
4	Mar. 14,	Wheelock,	------	1712	1.99	8.67	3415	From highway bridge.
5	Mar. 19,	Wheelock,	------	1403	1.73	6.57	2426	From highway bridge.
6	July 11,	Ryder,	------	649	0.32	1.02	208	From highway bridge.
7	Nov. 1,	Drake,	142	1223	0.96	5.29	1174	From highway bridge.
8	Nov. 26,	Langenheim,	158	1658	1.59	8.36	2630	From highway bridge.
	1911.							
9	June 18,	Drake,	126	698	0.43	1.24	302	From highway bridge.
10	Oct. 30,	Ryder,	132	819	0.75	2.29	611	From highway bridge.
	1912.							
11	July, 23,	Boehringer,	124	638	0.28	1.01	180	From highway bridge.

DAILY MEAN GAGE HEIGHTS OF CONEWANGO CREEK, NEAR FREWSBURG, CHAUTAUQUA COUNTY, N Y.

1909.	NOV.	DEC.
Day.	G. H.	G. H.
1,	1.29	1.89
2,	1.21	1.81
3,	1.53	1.77
4,	1.36	1.77
5,	1.37	1.76
6,	1.38	1.62
7,	1.43	1.77
8,	1.37	1.77
9,	1.57	*1.47
10,	1.68	*1.52
11,	1.54	*1.57
12,	1.53	*1.47
13,	1.49	1.52
14,	1.51	1.57
15,	1.49	a2.79
16,	1.49	4.00
17,	1.59	3.27
18,	1.91	*2.87
19,	2.07	*2.45
20,	2.11	*2.07
21,	2.32	*2.42
22,	2.91	*2.47
23,	3.99	*2.47
24,	3.81	*2.38
25,	2.96	*2.37
26,	2.32	*2.17
27,	2.11	*2.12
28,	2.09	*2.31
29,	1.91	*2.41
30,	1.93	*2.25
31,	----------	*2.24

*Creek frozen,
a Interpolated.

DAILY MEAN GAGE HEIGHTS OF CONEWANGO CREEK, NEAR FREWSBURG, CHAUTAUQUA COUNTY, N. Y.

1910. Day.	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
	G.H.	G.H.	G.H.	G.H.	G.H.	G.H.	G.H.	G.H.	G.H.	G.H.	G.H.	G.H.
1,	2.23	*6.04	*13.15	4.46	3.41	3.16	1.49	0.97	1.20	1.16	5.40	6.94
2	2.26	*5.64	b13.91	4.13	5.93	3.41	1.39	.91	1.25	1.16	6.00	7.73
3,	3.36	*5.31	14.51	3.91	9.05	4.81	1.43	.95	1.45	1.18	5.66	6.99
4,	3.79	*4.99	c14.51	3.76	9.08	4.90	1.36	.98	1.61	1.16	5.42	6.09
5,	3.38	*5.02	14.07	3.81	7.78	4.01	1.21	.95	1.71	e1.59	5.13	5.06
6,	3.21	*4.67	13.79	3.79	5.13	3.43	.99	.92	5.35	e2.02	3.16	4.90
7,	3.21	*4.29	14.21	3.70	4.48	4.01	1.11	.89	5.91	2.46	3.00	4.62
8,	*2.93	*4.29	14.11	3.60	4.08	4.03	1.07	.87	4.19	2.98	3.03	4.54
9,	*2.93	*4.30	13.59	3.41	3.68	3.69	1.21	.91	2.83	2.11	3.94	4.44
10,	*2.73	*4.18	12.99	3.29	3.48	2.96	1.16	1.01	2.31	1.96	6.89	4.44
11,	2.80	*3.94	12.21	3.10	3.33	3.96	1.23	1.41	1.79	1.61	9.29	4.54
12,	2.73	*3.89	11.11	2.92	3.23	4.63	1.33	1.69	1.56	1.46	†10.34	*4.42
13,	2.71	*3.84	9.79	2.83	3.03	4.43	1.46	1.20	1.39	1.32	10.24	*4.33
14,	2.67	*3.69	8.73	2.67	2.78	3.11	1.53	1.19	1.33	1.33	9.54	*4.25
15,	*2.58	*3.69	7.62	2.55	2.58	2.69	1.39	1.11	1.25	1.26	8.34	*4.29
16,	*2.45	3.89	7.13	2.61	2.38	2.26	1.31	.99	1.16	1.18	7.14	*4.04
17,	*2.35	5.60	7.07	2.57	2.31	1.93	1.30	.98	1.05	1.14	6.69	------
18,	2.73	5.89	6.69	2.47	2.25	1.83	1.15	.91	.97	1.07	6.04	*3.84
19,	9.93	*5.99	6.59	2.47	2.31	1.71	1.17	.97	.94	1.12	5.54	4.04
20,	10.55	*5.89	8.89	2.73	2.13	1.46	1.15	.98	1.25	1.16	4.98	4.14
21,	10.59	*5.74	9.51	3.18	2.43	1.31	1.15	.99	1.27	1.06	4.89	3.90
22,	10.65	*5.94	10.17	3.79	2.03	1.33	1.17	.99	1.27	1.24	4.61	3.85
23,	10.21	*6.17	10.30	3.47	2.28	1.27	1.13	.97	1.23	1.61	4.50	3.93
24,	*9.35	*5.51	9.55	3.29	2.73	1.29	1.12	.84	1.19	1.46	5.54	3.86
25,	*8.58	*5.29	8.62	5.13	2.48	1.11	1.13	.84	1.39	2.14	8.19	3.89
26,	*7.84	5.03	8.17	6.68	2.58	1.46	1.13	.79	1.39	3.09	8.23	3.93
27,	7.65	4.94	7.17	5.99	2.58	1.49	1.07	1.29	1.32	2.91	8.32	3.34
28,	*8.03	a10.91	6.19	4.89	2.58	1.49	.98	.85	1.29	3.94	8.24	3.54
29,	*7.78	-------	5.67	3.71	2.45	1.52	1.01	.89	1.27	5.11	8.52	5.65
30,	*7.23	-------	5.18	3.40	2.49	1.51	.97	.89	1.19	5.02	8.67	9.78
31,	*6.73	-------	4.85	-------	3.05	-------	.92	.87	--------	5.08	------	9.50

* Measurement to top of ice.
a Maximum 11.62 at 3.30 P. M.
b Gorge above and below bridge.
c Maximum 14.64 at 7.30 A. M.
† Maximum 10.59.
e Interpolated.

DAILY MEAN GAGE HEIGHTS OF CONEWANGO CREEK, NEAR FREWSBURG, CHAUTAUQUA COUNTY, N. Y.

1911. Day.	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
	G.H.	G.H.	G.H.	G.H.	G.H.	G.H.	G.H.	G.H.	G.H.	G.H.	G.H.	G.H.
1,	9.41	10.58	4.50	4.98	5.58	1.54	1.17	0.70	8.19	4.27	3.16	5.25
2,	9.67	8.42	4.25	4.58	6.52	1.41	1.13	.80	4.16	5.66	3.11	5.12
3,	9.69	6.58	4.00	4.23	5.46	1.41	1.25	1.01	2.31	5.25	3.03	4.98
4,	11.42	5.72	3.78	4.68	5.16	1.36	1.27	1.44	1.76	5.05	2.94	4.92
5,	11.93	5.21	3.58	6.66	†	1.41	1.17	1.26	3.63	4.94	2.76	4.64
6,	12.32	4.97	3.48	9.53	†	1.43	1.17	1.36	3.91	4.57	2.61	4.41
7,	10.55	4.02	3.30	9.51	†	1.39	1.15	1.42	3.71	6.07	5.16	4.34
8,	8.92	5.92	3.21	9.68	†	1.38	1.11	1.36	4.71	6.39	4.66	4.21
9,	8.87	4.25	3.40	7.18	†	1.40	1.11	1.31	4.30	4.02	4.26	7.38
10,	8.89	4.27	6.10	6.73	†	1.40	1.07	1.14	3.41	4.36	4.06	7.81
11,	9.04	4.22	6.35	5.73	†	1.34	1.01	.96	2.99	3.40	2.69	8.61
12,	11.23	3.72	6.38	4.73	†	1.36	.89	1.02	2.93	3.22	5.26	9.90
13,	11.47	3.62	7.61	4.43	†	1.32	.85	.97	2.93	2.95	5.71	10.11
14,	12.04	5.32	7.20	4.33	†	1.44	.85	.94	4.09	2.70	5.05	10.68
15,	12.79	6.27	5.80	4.31	†	1.34	.80	1.36	3.11	2.66	2.31	10.75
16,	12.44	7.60	4.90	4.23	†	1.34	.81	1.72	3.09	2.60	2.86	10.64
17,	11.66	8.56	4.51	4.08	†	1.46	.77	1.64	2.69	4.66	3.93	9.79
18,	9.54	8.12	4.40	3.78	2.12	1.31	.79	1.42	2.24	4.97	5.56	8.35
19,	7.44	8.47	4.20	3.53	2.04	*1.28	.77	1.30	1.90	4.32	9.46	6.58
20,	7.04	8.12	4.25	4.51	1.99	1.26	.78	1.22	1.86	3.93	10.03	5.10
21,	7.09	8.02	4.95	4.48	1.94	1.38	.91	1.14	1.75	3.88	10.09	5.17
22,	7.05	7.77	6.05	4.29	1.69	1.34	1.21	1.11	1.51	2.87	9.85	7.16
23,	6.14	7.32	6.00	4.18	1.69	1.29	1.19	1.06	1.46	2.92	9.71	7.38
24,	5.54	7.12	5.45	3.58	1.64	1.18	1.01	1.09	1.21	2.69	9.47	6.89
25,	4.54	6.32	4.61	3.33	1.61	1.26	.87	1.14	1.29	2.57	7.46	7.30
26,	7.79	5.12	4.30	3.13	1.58	1.31	.80	1.41	3.16	2.55	8.43	5.98
27,	10.69	5.97	5.10	2.98	1.76	1.44	.70	1.31	3.29	2.49	8.96	6.15
28,	10.96	5.87	8.40	2.63	1.38	1.76	.65	4.49	3.51	2.47	7.95	*5.70
29,	12.80	-------	7.25	2.78	1.26	1.44	.70	9.62	3.53	2.42	7.83	5.25
30,	12.64	-------	6.45	2.98	1.07	1.28	.68	9.46	3.71	2.34	7.11	5.45
31,	11.69	-------	5.45	-------	.96	--------	.69	8.46	--------	2.47	------	5.30

*Interpolated.
†Gage out on account of repairs to bridge.

KINZUA CREEK.

DESCRIPTION OF BASIN.

Kinzua creek, a tributary of the Allegheny river in Warren county, drains an area of approximately one hundred and eighty square miles. Rising in the centre of McKean county, it follows a general westerly direction through a rough, sparsely settled area, covered partly with second growth timber, and very little farming being carried on along its course, to its mouth at Kinzua, Warren county, a distance of about thirty-five miles. The slope is steep and in general the stream flows in a deep, narrow valley between high mountain ridges. Of the many tributary streams, the principal one is the South Branch. The headwaters of one of its tributaries are used for a water supply. The mean annual precipitation over this water shed is from 40 to 45 inches.

The discharge has been measured since October 23, 1909, at Dewdrop, approximately three miles above the mouth.

OHIO BASIN—STATION NO. 3.

KINZUA CREEK AT DEWDROP, PA.

DESCRIPTION OF STATION.

This station was established on October 23, 1909, by the Water Supply Commission of Pennsylvania in co-operation with the Flood Commission of Pittsburgh, and was discontinued November 20th, 1911. It is located on a single span, steel, through-truss, highway bridge, three miles above the mouth.

The channel is straight for 300 feet above and 600 feet below. Both banks overflow at extreme high stages, low fields lying on either side. The bed of the stream is composed of rock and gravel and fairly regular; good velocity, with eddy at right bank during normal stages.

Discharge measurements are made from the down-stream side of the bridge, the initial point for soundings being top edge of left bridge seat, the stations being painted on the down-stream hand-rail. A chain gage, with detached box, is fastened to the down-stream side of the bridge, near left bank. The length of chain from bottom of weight to marker is 12.99 feet. The elevation of zero is arbitrary datum. Bench mark No. 1, is outer down-stream corner of coping on left abutment, elevation 10.95 feet above gage datum. Bench mark No. 2 is a square cut in stone on top of down-stream end of right bridge seat, elevation 10.92 feet above gage datum. The gage was read twice daily by Gerald Welden.

Since the establishment of this station 14 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF KINZUA CREEK, AT DEWDROP, WARREN COUNTY, PENNA.

(Drainage area 171 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.	
	1909.							
1	Oct. 23,	Grant,	92	134	0.76	0.86	102	
	1910.							
2	Mar. 2,	Wheelock,	100	773	3.35	7.30	2582	Msmt. affected by gorge below causing backwater.
3	Mar. 4,	Wheelock,	100	492	3.55	4.46	1744	
4	Mar. 8,	Wheelock,	100	504	3.62	4.56	1814	
5	Mar. 12,	Wheelock,	100	318	2.33	2.84	742	
6	Mar. 28,	Wheelock,	100	329	2.51	3.00	826	
7	June 16,	Drake,	90	162	1.05	1.19	171	
8	July 11,	Ryder,	39	29	1.70	0.55	50	Wading 100 feet above station.
9	Aug. 17,	Drake,	65	72	0.36	0.30	26	
10	Nov. 2,	Drake,	95	144	0.94	0.98	132	
11	Nov. 27,	Langenheim,	100	200	1.38	1.58	275	
	1911.							
12	June 17,	Drake,	96	101	0.70	0.67	71	
13	Oct. 29,	Ryder,	100	191	1.02	1.81	194	
	1912.							
14	July 22,	Boehringer,	94	112	0.64	1.09	71	

DISCHARGE TABLE FOR KINZUA CREEK, AT DEWDROP, WARREN COUNTY, FROM OCTOBER 23, 1909, TO NOV. 20, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.
0.00	5	.50	254	3.00	824	.40	1688	.80	2820
.10	9	.60	283	.10	874	.50	1762	.90	2908
.20	15	.70	312	.20	927	.60	1838	6.00	2996
.30	24	.80	344	.30	982	.70	1916	.10	3084
.40	34	.90	376	.40	1040	.80	1994	.20	3172
.50	45	2.00	410	.50	1100	.90	2072	.30	3260
.60	58	.10	444	.60	1160	5.00	2150	.40	3348
.70	74	.20	481	.70	1220	.10	2228	.50	3436
.80	92	.30	519	.80	1280	.20	2308	.60	3524
.90	111	.40	558	.90	1342	.30	2390	.70	3612
1.00	132	.50	598	4.00	1408	.40	2475	.80	3700
.10	154	.60	640	.10	1474	.50	2560	.90	3790
.20	177	.70.	684	.20	1544	.60	2645	7.00	3880
.30	202	.80	730	.30	1616	.70	2732	8.00	4780
.40	228	.90	776						

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF KINZUA CREEK, AT DEWDROP, WARREN COUNTY, PENNA.

1909. Day.	NOV.		DEC.	
	G. H.	Dis.	G. H.	Dis.
1,	0.47	42	0.72	78
2,	0.47	42	0.79	90
3	0.48	43	0.73	79
4,	0.49	44	0.66	68
5,	0.48	43	0.64	65
6.	0.46	41	0.64	65
7,	0.44	38	0.62	61
8,	0.54	50	0.76	85
9,	0.95	122	0.87	105
10,	0.78	88	0.98	128
11,	0.70	74	0.94	119
12,	0.62	61	0.84	100
13,	0.58	55	0.85	102
14,	0.55	52	2.08	437
15,	0.54	50	1.33	211
16.	0.54	50	1.13	161
17,	0.68	71	1.03	139
18,	0.74	81	0.98	128
19,	0.73	79	1.03	139
20,	0.72	78	0.98	128
21,	1.00	132	1.13	161
22,	1.85	360	1.18	172
23.	1.75	328	1.18	172
24,	1.35	215	1.14	163
25,	1.18	172	1.19	175
26,	1.05	143	1.26	192
27,	0.98	128	1.30	202
28,	0.88	107	1.26	192
29,	0.86	103	1.24	187
30,	0.80	92	1.22	182
31,	--------	--------	1.20	177

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF KINZUA CREEK, AT DEWDROP, WARREN COUNTY, PA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.14	163	1.85	360	[a]8.60	3230	2.03	420	2.34	535	1.76	331	0.60	58	.45	40	.25	20	.28	22	.81	94	1.75	328
2,	1,20	177	1.61	286	[a]7.59	2650	1.87	366	3.15	900	1.85	360	0.59	57	.39	33	.26	20	.27	21	.91	113	1.68	306
3,	1.36	218	2.39	554	[a]6.20	1900	1.74	325	3.13	890	2.57	627	0.55	52	.39	33	.43	37	.24	19	1.01	134	1.50	254
4,	1.37	220	2.49	594	4.60	1838	1.73	322	3.23	944	2.17	470	0.55	52	.43	37	.76	85	.22	17	.88	107	1.42	233
5,	1.41	231	2.65	662	4.40	1688	1.90	376	2.83	744	2.05	427	0.51	46	.35	29	.70	74	.25	20	.78	88	1.34	212
6,	1.55	268	2.95	800	4.67	1893	1.73	322	2.60	640	1.97	400	0.46	41	.37	31	.86	103	.39	33	.74	81	1.28	197
7,	1.57	274	2.90	776	6.17	3146	1.65	298	2.40	558	1.87	366	0.75	83	.35	29	.76	85	.89	109	.66	68	1.22	182
8,	1.65	298	2.85	753	5.17	2284	1.55	268	2.23	492	1.77	334	0.75	83	.31	25	.58	55	.56	53	.70	74	1.28	197
9,	1.61	286	2.83	744	3.85	1311	1.49	251	2.07	434	1.63	292	0.50	45	.29	23	.50	45	.46	41	.78	88	1.25	190
10,	1.56	271	2.61	644	3.35	1011	1.43	236	1.93	386	1.55	268	0.44	40	.74	81	.40	34	.41	35	1.16	168	1.15	165
11,	1.55	268	2.45	578	3.07	859	1.35	215	1.80	344	1.56	271	0.50	45	.79	90	.33	27	.37	31	1.70	312	1.25	190
12,	1.55	268	2.35	538	2.93	790	1.35	215	1.69	309	1.51	257	0.88	107	.53	49	.28	22	.35	29	1.63	292	1.25	190
13,	1.55	268	2.35	538	2.83	744	1.25	190	1.59	280	1.40	228	1.52	260	.39	33	.32	26	.31	25	1.35	215	1.25	190
14,	1.55	268	2.35	538	2.60	640	1.22	182	1.52	260	1.26	192	0.90	111	.35	29	.33	27	.28	22	1.29	200	1.45	241
15,	1.55	268	2.36	542	2.37	546	1.17	170	1.41	231	1.19	175	0.65	66	.31	25	.32	26	.32	26	1.30	202	1.68	306
16,	1.55	268	2.39	554	2.35	538	1.43	236	1.33	210	1.17	170	.58	55	.31	25	.28	22	.31	25	1.23	184	2.00	410
17,	1.55	268	2.47	586	2.27	508	1.31	205	1.27	194	1.17	170	.62	61	.33	27	.27	21	.30	24	1.19	175	1.92	383
18,	2.57	627	2.45	578	2.13	455	1.75	328	1.33	210	1.30	202	.53	49	.31	25	.26	20	.26	20	1.19	175	1.65	298
19,	4.85	2033	2.47	586	2.37	546	1.85	360	1.25	190	1.13	161	.49	44	.39	33	.28	22	.26	20	1.17	170	1.65	298
20,	4.50	1762	2.59	636	3.25	954	2.15	462	1.23	185	1.05	143	.44	38	.37	31	.28	22	.26	20	1.13	161	1.62	289
21,	4.35	1652	2.65	662	3.73	1238	2.37	546	1.27	194	0.93	117	.40	34	.29	23	.28	22	.26	20	1.15	165	1.62	289
22,	4.85	2033	2.96	805	3.69	1214	2.31	523	1.17	170	0.87	105	.40	34	.24	19	.24	19	.72	78	1.19	175	1.58	277
23,	4.10	1474	2.96	805	3.70	1220	2.19	477	2.63	653	0.84	100	.40	34	.24	19	.20	15	.78	88	1.15	165	1.52	260
24,	3.75	1250	2.80	730	3.90	1342	2.57	627	1.95	393	0.79	90	.38	32	.24	19	.38	32	.61	60	1.50	254	1.45	241
25,	3.10	874	2.71	689	4.30	1616	3.65	1190	2.23	492	0.75	83	1.11	156	.24	19	.78	88	.78	88	1.90	376	1.45	241
26,	2.65	662	2.59	636	3.83	1299	3.37	1022	2.00	410	0.70	74	.75	83	.58	55	.66	68	.94	119	1.80	344	1.50	254
27,	2.80	730	3.33	999	3.25	954	3.03	839	1.87	366	0.69	72	.55	52	.47	42	.54	50	.90	111	1.60	283	1.50	254
28,	2.65	662	[a]7.95	2840	2.95	800	2.73	698	1.70	312	0.67	69	1.05	143	.31	25	.45	40	1.15	165	1.62	289	1.60	283
29,	2.40	558	-------	-----	2.65	662	2.53	611	1.60	283	0.65	66	.64	64	.29	23	.38	32	1.04	141	2.10	444	2.96	805
30,	2.30	519	-------	-----	2.40	558	2.45	578	1.73	322	0.63	63	.60	58	.25	20	.34	28	.88	107	1.92	383	4.14	1502
31,	2.37	546	-------	-----	2.20	481	-----	-------	1.70	312	-----	-------	.52	48	.23	18	-----	-------	.86	103	-----	-------	3.15	900

[a] Feb. 28, Maximum 9.95 feet at 5 p. m. March 1, Maximum 9.45 feet at 8 a. m. Gorge formed ¼ mile below station during night of Feb. 27, and broke about noon March 3. Discharge reduced 40 per cent.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF KINZUA CREEK, AT DEWDROP, WARREN COUNTY, PA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.25	954	2.80	730	1.50	254	2.15	462	2.00	410	0.92	115	1.06	145	0.16	13	1.02	136	2.65	662	2.72	693	----	----
2,	3.45	1070	2.58	632	1.60	283	2.05	427	2.28	511	.78	88	.40	34	.19	14	.86	103	3.48	1088	2.48	590	----	----
3,	4.81	2002	2.30	519	1.60	283	2.00	410	2.00	410	.70	74	.38	32	.61	60	.73	79	2.65	662	2.40	558	----	----
4,	3.40	1040	2.45	578	1.30	202	2.15	462	1.88	370	.78	88	.32	26	1.36	218	.65	66	2.45	578	2.28	511	----	----
5,	2.95	800	2.12	451	1.30	202	2.85	753	1.70	312	1.15	166	.32	26	.74	81	.72	78	2.55	619	2.20	481	----	----
6,	2.95	800	2.42	566	1.20	177	3.35	1011	1.68	306	.98	128	.32	26	.40	34	3.02	834	2.82	739	2.35	538	----	----
7,	2.60	640	2.00	410	.95	122	3.52	1112	1.68	306	.92	115	.38	32	.44	38	2.15	462	3.52	1112	2.72	693	----	----
8,	2.18	474	1.90	376	1.25	190	3.52	1112	1.50	254	.90	111	.34	28	.48	43	1.82	370	3.08	864	2.65	662	----	----
9,	2.12	451	1.70	312	1.45	241	3.18	916	1.50	254	.88	107	.28	22	.38	32	2.36	542	2.75	707	2.55	619	----	----
10,	1.85	360	1.55	268	1.75	328	2.95	800	1.45	241	.80	92	.30	24	.29	23	2.19	477	2.55	619	2.52	606	----	----
11,	2.00	410	1.38	223	1.70	312	2.75	707	1.48	249	1.02	136	.44	38	.23	18	1.90	376	2.50	598	2.48	590	----	----
12,	3.85	1311	1.31	205	1.90	376	2.56	623	1.38	223	1.68	306	.30	24	.19	14	1.57	274	2.38	550	*2.62	649	----	----
13,	3.80	1280	1.42	233	2.10	444	2.45	578	1.25	190	1.80	344	.20	15	.18	14	1.38	223	2.25	500	2.75	707	----	----
14,	4.80	1994	2.28	511	2.16	466	2.75	707	1.20	177	1.58	277	.17	13	.17	13	1.27	194	2.15	462	2.38	550	----	----
15,	5.22	2324	2.22	489	2.06	430	3.12	885	1.20	177	1.25	190	.19	14	.73	79	3.76	1256	2.00	410	2.30	519	----	----
16,	4.00	1408	1.85	360	2.05	427	2.80	730	1.18	172	1.08	150	.17	13	.74	81	2.88	767	2.20	481	2.15	462	----	----
17,	3.40	1040	2.70	684	1.90	376	2.58	632	1.18	172	1.05	143	.48	43	.46	41	2.32	527	2.35	538	*2.92	786	----	----
18,	2.65	662	3.92	1355	1.95	393	2.38	550	1.15	166	1.02	136	.45	40	.38	32	1.96	396	3.75	1250	3.70	1220	----	----
19,	2.55	619	2.95	800	1.72	318	2.15	462	1.10	154	1.02	136	.32	26	.32	26	1.77	334	2.80	730	*3.28	971	----	----
20,	2.35	538	2.60	640	1.90	376	3.40	1040	1.02	136	.95	122	.44	38	.25	20	1.67	303	2.50	598	2.85	753	----	----
21,	2.32	527	2.25	500	1.88	370	2.80	730	1.10	154	.92	115	.43	37	.21	16	1.51	257	2.48	590	----	----	----	----
22,	2.10	444	2.12	451	2.18	474	2.88	767	.90	111	.90	111	.26	20	.17	13	1.38	223	2.45	578	----	----	----	----
23,	1.72	318	2.05	427	2.68	675	2.85	753	.88	107	1.08	150	.21	16	.15	12	1.22	182	2.38	550	----	----	----	----
24,	1.71	315	2.01	413	2.32	527	2.55	619	.98	128	1.08	150	.30	24	.21	16	1.15	166	2.25	500	----	----	----	----
25,	1.60	283	1.70	312	2.92	786	2.40	558	.92	115	1.18	172	.26	20	.70	74	1.12	159	2.08	437	----	----	----	----
26,	1.71	315	1.58	277	2.18	474	2.28	511	.82	96	1.90	376	.24	19	.80	92	1.15	166	1.98	403	----	----	----	----
27,	2.44	574	1.88	370	3.85	1311	2.05	427	.75	83	1.72	318	.23	18	.50	45	1.15	166	1.95	393	----	----	----	----
28,	5.92	2926	1.70	312	3.70	1220	1.98	403	.70	74	1.40	228	.21	16	1.88	370	1.12	159	1.90	376	----	----	----	----
29,	4.34	1645	----	----	3.20	927	1.85	360	.70	74	1.18	172	.18	14	2.65	662	3.65	1190	1.90	376	----	----	----	----
30,	3.85	1311	----	----	2.85	753	2.00	410	.65	66	1.10	154	.15	12	1.50	254	2.78	721	1.88	370	----	----	----	----
31,	3.15	900	----	----	2.45	578	----	----	.70	74	----	----	.14	11	1.17	170	----	----	2.42	566	----	----	----	----

*Interpolated.

ESTIMATED MONTHLY DISCHARGE OF KINZUA CREEK, AT DEWDROP, WARREN COUNTY, PENNA.

(Drainage area 171 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1909.					
November,	360	38	99	0.579	0.636
December,	437	61	144	0.842	0.970
1910.					
January,	2033	163	634	3.708	4.275
February,	*2840	286	715	4.181	4.354
March,	†3146	455	1255	7.339	8.461
April,	1190	170	429	2.509	2.799
May,	944	170	414	2.421	2.791
June,	627	63	223	1.304	1.455
July,	260	32	69	.404	.466
August,	90	18	33	.193	.222
September,	103	15	40	.234	.261
October,	165	17	55	.322	.360
November,	444	68	199	1.164	1.298
December,	1502	182	334	1.951	2.249
The year,	†3146	15	367	2.144	28.991
1911.					
January,	2926	283	959	5.608	6.466
February,	1355	205	479	2.801	2.917
March,	1311	122	461	2.696	3.108
April,	1112	360	664	3.883	4.332
May,	511	66	202	1.181	1.361
June,	376	74	166	.971	1.083
July,	145	11	28	.164	.189
August,	662	12	84	.491	.566
September,	1256	66	372	2.175	2.426
October,	1250	370	610	3.567	4.112

*Estimated.
†Free flow.

BROKENSTRAW CREEK.

DESCRIPTION OF BASIN.

Brokenstraw creek, a tributary of the Allegheny river, drains a total of approximately 324 square miles, 70 of which lie in New York State. Rising in Chautauqua county, N. Y., about five miles north of the Pennsylvania State Line, it flows in a general southerly direction and enters Erie county, Pa., near its northeastern corner, and turning southeasterly passes into and through Warren county to its mouth at Irvineton, a distance of about 35 miles. This stream flows through a rolling, agricultural country, bordered by a wide valley, sparsely settled and considerably deforested. A few boroughs lie in the basin, and some farming villages. The flow of this stream is not rapid, the course lying at an elevation of 1,720 feet, and the mouth at 1,140 feet, the average rate per mile being 10 feet from the New York State Line through Pennsylvania to its mouth. The upper water shed lies within the glacial area. There are many tributaries, Little Brokenstraw being the largest, and on the headwaters there are a few lakes, ponds and swamps. It is not used for water supply and very little power has been developed.

The mean annual precipitation over this water shed is from 40 to 45 inches.

The discharge of this creek has been measured since October 22, 1909, at Youngsville, Warren Co., approximately 3 miles above the mouth.

OHIO BASIN—STATION NO. 4.

BROKENSTRAW CREEK AT YOUNGSVILLE, PA.

DESCRIPTION OF STATION.

This station was established on October 22nd, 1909, by the Water Supply Commission of Pennsylvania, in co-operation with the Flood Commission of Pittsburgh, and is located on a single span, steel, through-truss, highway and trolley bridge, at Youngsville, Warren Co., about 3 miles above the mouth of the creek.

The channel above the station curves gradually to the right, looking upstream, with a riffle about 300 feet above the bridge, while below the station the channel is straight for 1,000 feet, with a riffle 400 feet below the bridge. The right bank is high and does not overflow, while the left bank overflows for a short distance under approach trestle at high stages. The bed of the creek is composed of clay and gravel, and is fairly permanent. The channel at this section is deep and quiet, and the flow mostly at right side in low stages.

Discharge measurements are made from the downstream side of the bridge during medium and high stages, and by wading at low stages. The initial point for soundings is top edge bridge seat, right abutment.

A 14 foot staff gage, graduated in feet and tenths, was spiked to a large pile on left bank, just above the bridge, but was subsequently removed to the right abutment, downstream, side, where it is at present located. Bench Mark No. 1, is ring cut in stone on top of upstream corner of right abutment on the outer edge near the date 1891 cut in stone; elevation 12.42 feet above zero of gage, which is arbitrary datum. The gage is read twice daily by W. F. Schnell, Youngsville, Pa.

Since the establishment of this station, 14 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF BROKENSTRAW CREEK, AT YOUNGSVILLE, WARREN COUNTY, PENNA.

(Drainage area 290 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.	
	1908.							
1	Aug. 25,	Stevens,	133	365	0.124	0.40	45	Measurement from highway bridge at Irvineton.
2	Sept. 28,	Gannett & Ryder,	77	68	0.66	0.20	45	Wading measurement 600 feet above R. R. bridge at Irvineton.
	1910.							
3	Jan. 31,	Kenneth Grant,	116	520	1.25	2.00	648	
4	Mar. 1,	Wheelock,	148	1111	5.27	6.90	5850	(Rising).
5	Mar. 3,	Wheelock,	148	1131	5.07	7.00	5730	(Rising).
6	Mar. 5,	Wheelock,	145	961	3.92	5.80	3770	
7	Mar. 7,	Wheelock,	150	1227	5.10	7.55	6264	(Falling).
8	Mar. 10,	Wheelock,	107	629	2.27	3.10	1424	
9	Mar. 15,	Wheelock,	100	522	1.65	2.30	857	
10	July 13,	C. E. Ryder,	88	101	2.14	0.60	193	Wading measurement same as No. 2, drainage area 10 per cent. greater than at gage.
11	Nov. 28	Langenheim,	104	549	1.95	2.65	1073	
	1911.							
12	June 19,	Drake,	85	304	0.36	0.29	109	
13	Oct. 30,	Ryder,	92	394	0.56	1.17	220	0.6 measurement.
	1912.							
14	July 23	Boehringer,	87	322	0.19	0.30	60	Surface Measurment.

DISCHARGE TABLE FOR BROKENSTRAW CREEK, AT YOUNGSVILLE, WARREN COUNTY, FROM OCT. 31, 1909.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.
.00	50	.70	485	.30	1575	.90	2890	.50	4660
.10	62	.80	540	.40	1650	5.00	2980	.60	4820
.20	75	.90	600	.50	1725	.10	3070	.70	4980
.30	88	2.00	660	.60	1800	.20	3160	.80	5150
.40	101	.10	720	.70	1875	.30	3250	.90	
.50	115	.20	785	.80	1950	.40	3340	7.00	5490
.60	133	.30	850	.90	2030	.50	3440	.10	5665
.70	154	.40	915	4.00	2110	.60	3540	.20	5840
.80	175	.50	985	.10	2190	.70	3640	.30	6015
.90	198	.60	1055	.20	2270	.80	3740	.40	6190
1.00	224	.70	1125	.30	2350	.90	3850	.50	6365
.10	255	.80	1200	.40	2440	6.00	3970	.60	6540
.20	287	.90	1275	.50	2530	.10	4100	.70	6715
.30	320	3.00	1350	.60	2620	.20	4230	.80	6890
.40	355	.10	1425	.70	2710	.30	4370	.90	7065
.50	392	.20	1500	.80	2800	.40	4510	8.00	7240
.60	434								

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF BROKENSTRAW CREEK, AT YOUNGSVILLE, WARREN COUNTY, PENNA.

Day. 1909.	NOV.		DEC.	
	G H	Dis.	G H	Dis.
1,	0.35	94	0.60	133
2,	.35	94	.50	115
3,	.40	101	.50	115
4,	.40	101	.50	115
5,	.40	101	.50	115
6,	.40	101	.50	115
7,	.35	94	.45	108
8,	.38	98	.45	108
9,	.75	164	.45	108
10,	.80	175	.45	108
11,	.65	144	.45	108
12,	.50	115	.45	108
13,	.50	115	.50	115
14,	.45	108	2.30	850
15,	.40	101	2.10	720
16,	.45	108	2.10	720
17,	.75	164	1.80	540
18,	1.00	224	1.80	540
19,	1.00	224	1.00	224
20,	1.00	224	1.00	224
21,	1.35	338	1.00	224
22,	1.90	600	1.00	224
23,	2.20	785	1.00	224
24,	2.10	720	1.00	224
25,	1.20	287	1.00	224
26,	1.00	224	1.00	224
27,	.80	175	1.00	224
28,	.70	154	1.00	224
29,	.70	154	1.00	224
30,	.65	144	1.00	224
31,			1.00	224

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF BROKENSTRAW CREEK, AT YOUNGSVILLE, WARREN COUNTY, PA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	0.80	175	1.90	600	7.15	5750	1.20	287	1.30	320	1.40	355	0.45	108	0.30	88	0.20	75	0.60	133	2.80	1200	2.45	950
2,	.90	198	1.85	570	7.90	7065	1.10	255	3.20	1500	1.00	434	.45	108	.30	88	.20	75	.55	124	3.75	1910	2.30	850
3,	1.30	320	1.80	540	7.10	5665	1.00	224	3.80	1950	2.75	1160	.45	108	.30	88	.45	108	.50	115	4.35	2400	2.15	752
4,	1.30	320	1.70	485	6.00	3970	1.15	271	4.25	2310	2.50	985	.35	94	.30	88	.50	115	.50	115	3.90	2030	2.10	720
5,	1.30	320	1.70	485	6.10	4100	1.45	374	3.40	1650	1.85	570	.30	88	.30	88	.60	133	.50	115	2.30	850	1.95	630
6,	1.30	320	1.70	485	6.15	4165	1.35	338	2.15	752	1.50	392	.25	82	.30	88	2.80	1200	1.30	320	1.85	570	1.80	540
7,	1.30	320	1.70	485	7.30	6015	1.20	287	1.70	485	1 40	355	.45	108	.30	88	2.20	785	2.30	850	1.75	512	1.80	540
8,	1.30	320	1.40	355	5.95	3910	1.10	255	1.40	355	1.25	304	.50	115	.30	88	1.50	392	2.10	720	1.75	512	1.80	540
9,	1.30	320	1.30	320	4.50	2730	1.10	255	1.30	320	1.10	255	.45	108	.30	88	1.30	320	1.30	320	1.90	600	1.80	540
10,	1.30	320	1.30	320	3.20	1500	1.10	255	1.20	287	1.10	255	.40	101	.60	133	1.30	320	1.10	255	3.70	1880	1.70	485
11,	1.30	320	1.30	320	2.80	1200	.90	198	1.10	255	1.35	338	.40	101	.45	108	1.30	320	.90	198	5.65	3590	1.70	485
12,	1.30	320	1.30	320	2.80	1200	.90	198	.95	211	2.05	600	.45	108	.35	94	1.00	224	.80	175	5.25	3200	1.70	485
13,	1.30	320	1.30	320	2.95	1312	.90	198	.90	198	1.80	540	.65	144	.30	88	.90	198	.75	164	3.60	1800	1.70	485
14,	1.30	320	1.30	320	2.70	1125	.85	186	.85	186	1.25	304	.50	115	.30	88	.85	186	.70	154	2.95	1310	1.70	485
15,	1.30	320	1.30	320	2.40	915	.80	186	.85	186	1.00	224	.50	115	.30	88	.85	186	.70	154	2.65	1090	1.70	485
16.	1.30	320	1.50	392	2.30	850	.90	198	.80	175	.85	186	.45	108	.25	82	.85	186	.70	154	2.55	1020	1.75	485
17,	1.30	320	2.00	660	2.30	850	.90	198	.70	154	.80	175	.40	101	.20	75	.80	175	.65	144	2.40	915	1.70	485
18,	3.50	1725	2.00	660	2.10	720	.90	198	1.05	240	.75	164	.40	101	.20	75	.80	175	.60	133	2.30	850	1.70	485
19,	5.10	3070	2.00	660	2.10	720	1.10	255	.95	211	.70	154	.40	101	.20	75	.75	164	.60	133	2.20	785	1.70	485
20,	4.70	2710	2.00	660	4.00	2110	1.45	374	.80	175	.65	144	.40	101	.20	75	.70	154	.60	133	2.20	785	1.60	434
21,	4.50	2530	2.00	660	4.35	2395	1.65	460	.80	175	.50	115	.35	94	.20	75	.60	133	.60	133	2.10	720	1.60	434
22,	4.20	2270	2.00	600	3.95	2070	1.65	460	.75	164	.50	115	.30	88	.20	75	.40	101	.70	154	2.00	660	1.60	434
23,	2.80	1200	2.00	660	3.50	1725	1.55	413	1.50	392	.50	115	.30	88	.20	75	.50	115	1.40	355	1.90	600	1.60	434
24,	2.50	985	2.00	660	3.20	1500	1.40	355	1.15	271	.50	115	.55	124	.20	75	.70	154	1.30	320	2.95	1310	1.60	434
25,	2.00	660	2.00	660	3.20	1500	2.25	818	1.30	320	.50	115	.50	115	.20	75	1.00	224	1.40	355	3.95	2070	1.60	434
26,	2.00	660	1.80	540	2.80	1200	3.10	1425	1.30	320	.50	115	.45	108	.20	75	.90	198	1.70	485	4.00	2110	1.60	434
27,	2.50	985	2.15	752	2.15	752	2.65	1090	1.10	255	.50	115	.40	101	.20	75	.80	175	1.90	600	3.20	1500	1.60	434
28,	2.50	985	*6.80	5150	1.85	570	2.00	660	.90	198	.45	108	.40	101	.20	75	.70	154	2.30	850	2.95	1310	1.65	460
29,	2.50	985	-----	-------	1.60	434	1.60	434	1.30	320	.45	108	.40	101	.20	75	.65	144	2.50	985	2.90	1275	3.75	1912
30,	2.20	785	-----	-------	1.45	374	1.40	355	1.15	271	.45	108	.40	101	.20	75	.60	133	2.70	1125	2.80	1200	4.95	2940
31,	2.00	660	-----	-------	1.30	320	-----	-------	1.20	287	-----	-------	.35	94	.20	75	-----	-------	2.70	1125	-----	-------	4.60	2620

*Maximum 7.1 feet at 5 p. m.=5665 sec. ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF BROKENSTRAW CREEK, AT YOUNGSVILLE, WARREN COUNTY, PA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.70	1875	2.30	850	1.80	540	2.20	785	2.00	660	.40	101	.20	75	.00	50	1.40	355	4.00	2110	2.00	660	3.10	1425
2,	4.55	2580	2.10	720	1.45	374	2.00	660	3.00	1350	.40	101	.20	75	.00	50	1.00	224	4.30	2350	1.90	600	2.10	720
3,	5.75	3690	1.70	485	1.40	355	1.90	600	2.60	1060	.40	101	.20	75	.50	115	.85	186	3.70	1880	1.70	485	2.00	660
4,	5.00	2980	2.00	660	1.30	320	2.05	690	2.00	660	.40	101	.20	75	.40	101	.65	144	2.90	1280	1.55	413	2.00	660
5,	3.50	1720	1.60	434	1.30	320	4.45	2480	1.80	540	.70	154	.20	75	.10	101	.60	133	2.70	1120	1.50	392	1.90	600
6,	2.60	1060	1.40	355	1.25	304	4.80	2800	1.55	413	.70	154	.20	75	.40	101	1.70	485	2.40	915	1.65	460	1.70	485
7,	2.30	850	1.30	320	1.00	224	4.60	2020	1.35	338	.70	154	.20	75	.25	82	1.35	338	2.90	1280	2.30	850	1.50	392
8,	2.10	720	1.30	320	1.00	224	3.60	1800	1.15	271	.65	144	.20	75	.20	75	1.15	271	2.60	1060	2.90	1280	1.50	392
9,	2.20	785	1.20	287	1.20	287	2.90	1280	1.10	255	.60	133	.20	75	.15	68	.90	198	2.40	915	2.95	1310	2.15	752
10,	2.10	720	1.10	255	2.30	850	2.45	950	1.10	255	.55	124	.15	68	.10	62	.80	175	2.00	660	2.10	720	3.00	1350
11,	2.20	785	1.10	255	3.05	1390	2.25	818	1.00	224	.55	124	.15	68	.05	56	.65	144	1.65	460	2.10	720	3.00	1350
12,	5.75	3690	1.00	224	3.40	1650	2.15	752	1.00	224	.85	186	.10	62	.00	50	.60	133	1.55	413	2.25	818	3.30	1580
13,	6.30	4370	.90	198	3.50	1720	1.95	630	.95	211	.80	175	.10	62	.00	50	.50	115	1.35	338	3.00	1350	5.50	3440
14,	a6.80	5150	1.80	540	3.75	1910	2.10	720	.85	186	.70	154	.10	62	.00	50	.45	108	1.20	287	2.70	1120	5.50	3440
15,	6.70	4980	4.20	2270	2.50	985	2.25	818	.80	175	.60	133	.10	62	.40	101	d5.16	3120	1.10	255	2.45	950	4.40	2440
16,	4.75	2760	3.75	1910	1.90	600	2.05	690	.80	175	.50	115	.10	62	.75	164	4.30	2350	1.10	255	2.40	915	3.90	2030
17,	3.30	1580	4.05	2150	1.80	540	1.80	540	.80	175	.50	115	.10	62	.95	211	3.60	1800	1.15	271	2.30	850	3.50	1720
18,	2.40	915	5.00	2980	1.90	600	1.60	434	.80	175	.40	101	.10	62	.65	144	2.70	1120	3.60	1800	5.90	3850	2.90	1280
19,	2.25	818	5.05	3020	1.90	600	1.40	355	.80	175	.25	82	.10	62	.55	124	1.90	600	3.20	1500	5.60	3540	2.60	1060
20,	1.95	630	3.10	1420	1.90	600	4.20	2270	.80	175	.20	75	.05	56	.35	94	1.35	338	2.40	915	5.35	3300	2.00	660
21,	2.30	850	2.50	985	1.90	600	3.65	1840	.75	164	.15	68	.05	56	.20	75	1.20	287	1.95	630	5.20	3160	2.00	660
22,	2.30	850	2.35	882	3.10	1420	2.70	1120	.70	154	.10	62	.05	56	.10	62	1.10	255	1.80	540	3.80	1950	1.85	570
23,	1.50	392	1.75	512	3.45	1690	2.45	950	.70	154	.10	62	.05	56	.00	50	1.00	224	1.75	512	3.20	1500	3.00	1350
24,	1.75	512	1.90	600	3.00	1350	2.25	818	.70	154	.10	62	.05	56	.05	56	1.00	224	1.55	413	2.80	1200	3.25	1540
25,	1.70	485	1.85	570	2.20	785	1.90	600	.70	154	.25	82	.05	56	.75	164	.85	186	1.40	355	2.90	1275	2.80	1200
26,	1.40	355	1.80	540	2.30	850	1.75	512	.60	133	.45	108	.05	56	.50	115	.80	175	1.40	355	2.60	1055	2.10	720
27,	4.90	2890	2.30	850	2.80	1200	1.55	413	.50	115	.60	133	.05	56	.35	94	1.00	224	1.30	320	2.30	850	2.50	985
28,	b8.25	7680	2.00	660	4.35	2400	1.40	355	.50	115	.65	144	.00	50	c4.90	2890	1.05	240	1.20	287	2.55	1020	2.70	1120
29,	5.05	3020	----	-------	3.70	1880	1.25	304	.45	108	.45	108	.00	50	6.00	3970	4.10	2190	1.20	287	3.20	1500	2.10	720
30,	4.20	2270	----	-------	2.60	1060	1.40	355	.45	108	.25	82	.00	50	5.50	3440	3.50	1720	1.20	287	3.50	1725	2.25	818
31,	2.90	1280	----	-------	2.50	985	----	------	.45	108	----	-------	.00	50	3.00	1350	----	-------	1.10	255	----	-------	2.50	985

a Maximum, 7.3 feet at 11 p. m. 6015 sec. ft.
b Maximum 8.4 feet at 5 p. m. 7940 sec. ft.
c Maximum 7.0 feet at 9.30 p. m. 5490 sec. ft.
d Maximum, 6.2 feet. 4230 sec. ft.

ESTIMATED MONTHLY DISCHARGE OF BROKENSTRAW CREEK, AT YOUNGSVILLE, WARREN COUNTY.

(Drainage area 290 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1909.					
November,	785	94	208	.717	.800
December,	850	108	250	.862	.993
1910.					
January,	3070	175	819	2.824	3.256
February,	5665	320	679	2.341	2.438
March,	7065	320	2210	7.621	8.786
April,	1425	186	382	1.317	1.470
May,	2310	154	480	1.655	1.908
June,	1160	108	304	1.048	1.169
July,	144	82	104	.359	.414
August,	133	75	84	.290	.334
September,	1200	75	234	.807	.901
October,	1125	115	358	1.234	1.423
November,	3590	512	1352	4.662	5.201
December,	2620	434	720	2.483	2.863
The year,	7065	75	644	2.220	30.163
1911.					
January,	7940	355	2040	7.034	8.109
February,	3020	198	902	3.110	3.239
March,	2400	224	923	3.183	3.670
April,	2800	304	999	3.445	3.814
May,	1350	108	295	1.017	1.172
June,	186	62	115	.396	.442
July,	75	50	63	.217	.250
August,	5490	50	455	1.569	1.809
September,	4230	108	602	2.076	2.316
October,	2350	255	784	2.703	3.116
November	3850	392	1327	4.576	5.106
December,	3440	392	1197	4.127	4.758
The year,	7940	50	809	2.788	37.831

OIL CREEK.

DESCRIPTION OF BASIN.

Oil creek, a tributary of the Allegheny river, drains an approximate area of 335 square miles in Erie, Crawford, Warren and Venango counties. It rises in Oil Creek Lake, Crawford County, which lake is fed by numerous streams and runs heading in Erie County; the east branch of Oil creek rising in a large lake at Spartansburg, Crawford county, also fed by numerous streams rising in Erie county. These two streams join at Centerville, Crawford county, the creek proper having a fall of 116 feet in a distance of 6 miles, while the east branch has a fall of 150 feet in eight miles. From the junction of these streams Oil creek flows in a general southerly direction through Crawford and Venango counties to its mouth at Oil City, a distance of 30 miles. From Centerville (elevation 1,275) to Oil City (elevation 985), the slope of the creek is at a uniform rate of 10 feet per mile. There are many tributaries, none, however, of any considerable size. The valley of Oil creek is wide and flat, the hills rising abruptly, and often with cliffs, from its flood plain. Its upper section lies in the glacial area. The valley is underlain with productive oil fields, farming and oil production being carried on throughout the basin. Its valley is largely deforested, and along its course lie numerous large boroughs and villages. The stream is used extensively for industrial water supply but no domestic supplies are obtained from it.

The mean annual precipitation over this water shed is from 40 to 45 inches.

The discharge has been measured since October 20th, 1909, at Rouseville, about two and one-half miles above the mouth.

OHIO BASIN—STATION NO. 5.

OIL CREEK AT ROUSEVILLE, PA.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania, in co-operation with the Flood Commission of Pittsburg, on October 20th, 1909, and is located on a two span, steel, through truss, highway bridge, about two and one-half miles above the mouth and one-half mile below Rouseville.

The channel above the station is straight for 200 feet, a trolley bridge crossing the same about 400 feet up the stream. The channel below the station is straight for 1,000 feet. The right bank is high and only overflows in extreme floods, while the left bank is high and not subject to overflow. The bed is composed of gravel and is fairly permanent. There is slight velocity at low stages.

Discharge measurements are made from the downstream side of the bridge and by wading at extreme low stages. The initial point for soundings is top edge, right bridge seat.

A staff gage is bolted to the downstream face of the right abutment. The elevation of zero is arbitrary datum. Bench Mark No. 1 is top chord at upstream end of stone in bottom course at downstream corner of right abutment; elevation 1.46 feet above gage datum. Bench Mark No. 2 is bottom of iron bed plate on right abutment downstream truss (directly above gage) elevation 15.76 feet above gage datum. The gage is read twice daily by C. H. Wright.

Since the establishment of this station 20 discharge measurements have been taken.

DISCHARGE MEASUREMENTS OF OIL CREEK, AT ROUSEVILLE, VENANGO COUNTY, PENNA.
(Drainage area 330 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.	
1	1908. Aug. 24,	Stevens,	140	167	0.35	0.60	59	Measurement from Centre St. bridge, Oil City.
2	Sept. 27,	Gannett & Ryder,	61	68	0.58	------	39	Wading measurement 100 feet below trolley bridge at Rouseville.
3	1910. Feb. 1,	Grant,	181	465	1.11	1.61	515	
4	Feb. 4,	Drake,	181	577	0.95	1.95	546	Current too slow for good msmt. with large meter.
5	Feb. 12,	Drake,	181	409	0.46	1.30	189	Ice conditions.
6	Feb. 22,	Drake,	181	593	1.09	1.90	649	
7	Feb. 28,	Drake,	181	1137	4.57	4.80	5196	
8	Mar. 4,	Drake,	181	972	4.07	3.90	3957	
9	Mar. 11,	Drake,	181	678	1.86	2.30	1281	
10	April 7,	Drake	181	532	0.59	1.50	315	
11	June 14,	Drake,	181	507	0.67	1.40	341	Wading measurement above trolley bridge.
12	July 12,	Ryder,	------	78	1.14	0.77	89	
13	Aug. 13,	Drake,	188	373	0.16	0.70	58	
14	Nov. 3,	Drake,	188	684	2.08	2.50	1420	
15	Dec. 30,	Drake,	182	923	4.03	3.79	3717	
16	1911. Jan. 2,	Drake,	182	896	3.61	3.55	3230	
17	Jan. 15,	Drake,	182	1077	5.26	4.56	5679	
18	June 20,	Drake,	172	387	0.19	0.75	74.5	
19	Oct. 27,	Ryder,	182	498	0.69	1.36	344	
20	1912. July 27,	Boehringer,	177	390	0.29	0.87	114	

DISCHARGE TABLE FOR OIL CREEK, AT ROUSEVILLE, VENANGO COUNTY, FROM OCT. 20, 1909.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.
0.40	33	.60	420	.80	2000	.90	3900	5.00	6120
.50	45	.70	495	.90	2170	4.00	4080	.10	6340
.60	60	.80	580	3.00	2340	.10	4260	.20	6580
.70	77	.90	675	.10	2510	.20	4450	.30	6820
.80	96	2.00	780	.20	2680	.30	4640	.40	7080
.90	118	.10	900	.30	2850	.40	4840	.50	7360
1.00	145	.20	1030	.40	3020	.50	5040	.60	7640
.10	175	.30	1170	.50	3195	.60	5240	.70	7940
.20	210	.40	1320	.60	3370	.70	5460	.80	8240
.30	255	.50	1490	.70	3545	.80	5680	.90	8540
.40	300	.60	1660	.80	3720	.90	5900	6.00	8840
.50	355	.70	1830						

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF OIL CREEK, AT ROUSEVILLE, VENANGO COUNTY, PENNA.

1909. Day.	OCT.		NOV.		DEC.	
	G. H.	Dis.	G. H.	Dis.	G. H.	Dis.
1,			0.68	74	0.80	96
2,			0.71	79	0.80	96
3,			0.72	81	0.70	77
4,			0.70	77	0.80	96
5,			0.73	83	0.80	96
6,			0.74	85	0.80	96
7,			0.75	86	0.80	96
8,			0.78	92	0.90	118
9,			0.85	107	0.90	118
10,			0.91	121	0.90	118
11,			0.86	109	0.90	118
12,			0.78	92	0.90	118
13,			0.76	88	1.05	160
14,			0.74	85	2.30	1170
15,			0.75	86	1.50	355
16,			0.75	86	1.25	232
17,			0.87	111	1.10	175
18,			1.15	192	1.00	145
19,			0.98	140	1.00	145
20,	0.70	77	1.10	175	1.00	145
21,	0.72	81	1.45	328	1.00	145
22,	0.77	90	1.90	675	0.90	118
23,	0.85	107	1.90	675	0.90	118
24,	0.83	103	1.45	328	0.90	118
25,	0.84	105	1.20	210	0.80	96
26,	0.81	98	1.10	175	0.80	96
27,	0.79	94	1.00	145	0.80	96
28,	0.75	86	0.90	118	0.70	77
29,	0.72	81	0.80	96	0.70	77
30,	0.70	77	0.80	96	0.70	77
31,	0.68	74			0.70	77

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF OIL CREEK, AT ROUSEVILLE, VENANGO COUNTY, PENNA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	0.80	96	1.60	420	‡5.40	7080	1.50	355	1.60	420	1.50	355	0.80	96	0.80	96	0.68	74	0.75	86	1.75	538	1.95	728
2,	0.95	132	1.75	538	4.75	5570	1.40	300	2.50	1490	1.70	495	0.80	96	0.80	96	0.65	68	0.70	77	2.35	1245	1.75	538
3,	1.45	328	1.80	580	4.55	5140	1.35	278	2.25	1100	2.65	1745	0.80	96	0.80	96	0.68	74	0.70	77	2.65	1745	1.70	495
4,	1.50	355	1.90	675	4.05	4170	1.30	255	3.05	2425	2.30	1170	0.80	96	0.80	96	0.85	107	0.70	77	1.75	538	1.55	388
5,	1.50	355	1.75	538	3.90	3900	1.55	388	2.35	1245	1.85	628	0.80	96	0.78	96	0.90	118	0.80	96	1.45	328	1.50	355
6,	1.60	420	1.60	420	4.30	4640	1.55	388	2.00	780	1.70	495	0.78	92	0.75	86	0.88	114	1.10	175	1.25	232	1.45	328
7,	1.35	278	1.50	355	5.05	6230	1.45	328	1.75	538	1.55	388	0.85	107	0.75	86	0.95	132	1.75	538	1.05	160	1.35	278
8,	1.30	255	1.40	300	3.85	3810	1.35	278	1.65	458	1.45	328	1.05	160	0.70	77	0.82	100	1.70	495	1.25	232	1.30	255
9,	1.20	210	1.50	355	2.90	2170	1.40	300	1.60	420	1.40	300	0.90	118	0.70	77	0.80	96	1.30	255	1.25	232	1.30	255
10,	1.20	210	1.40	300	2.50	1490	1.40	300	1.50	355	1.40	300	0.85	107	0.72	81	0.80	96	0.95	132	1.50	355	1.25	232
11,	1.20	210	1.30	255	2.45	1405	1.30	255	1.45	328	1.60	420	0.80	96	0.80	96	0.78	92	0.80	96	2.80	2000	1.40	300
12,	1.15	192	1.30	255	2.35	1245	1.30	255	1.40	300	1.90	675	0.80	96	0.78	92	0.72	81	0.80	96	2.35	1245	1.40	300
13,	1.10	175	1.30	255	2.50	1490	1.20	210	1.40	300	1.70	495	1.05	160	0.72	81	0.70	77	0.80	96	1.95	728	1.35	278
14,	1.10	175	1.30	255	2.35	1245	1.15	192	1.30	255	1.45	328	1.05	160	0.70	77	0.70	77	0.80	96	2.00	780	1.35	278
15,	1.00	145	1.35	278	2.20	1030	1.10	175	1.25	232	1.40	300	0.90	118	0.70	77	0.70	77	0.78	92	1.85	628	1.25	232
16,	1.05	160	1.65	458	2.05	840	1.20	210	1.15	192	1.50	355	0.80	96	0.65	68	0.70	77	0.75	86	1.75	538	1.25	232
17,	1.30	255	1.90	675	2.00	780	1.20	210	1.10	175	1.40	300	0.80	96	0.65	68	0.70	77	0.70	77	1.65	458	1.25	232
18,	*3.25	2765	1.90	675	1.85	628	1.20	210	1.15	192	1.35	278	0.85	107	0.65	68	0.68	74	0.70	77	1.80	580	1.20	210
19,	§		1.75	538	1.95	728	1.35	278	1.30	255	1.25	232	0.80	96	0.68	74	0.65	68	0.70	77	1.65	458	1.30	255
20,	§		1.80	580	2.90	2170	1.50	355	1.20	210	1.10	175	0.80	96	0.70	77	0.65	68	0.70	77	1.60	420	1.35	278
21,	§		1.85	628	3.05	2425	1.55	388	1.30	255	1.00	145	0.80	96	0.65	68	0.65	68	0.70	77	1.60	420	1.30	255
22,	§		1.95	728	2.60	1660	1.75	538	1.20	210	0.95	132	0.80	96	0.60	60	0.65	68	0.85	107	1.60	420	1.25	232
23,	§		1.90	675	2.45	1405	1.65	458	1.40	300	0.90	118	0.88	114	0.60	60	0.62	63	1.10	175	1.60	420	1.25	232
24,	§		1.65	458	2.35	1245	1.55	388	1.55	388	0.90	118	0.90	118	0.60	60	0.78	92	0.95	132	2.20	1030	1.55	388
25,	§		1.55	388	2.15	965	2.55	1575	1.70	495	0.90	118	0.85	107	0.60	60	1.05	160	1.05	160	3.05	2425	1.75	538
26,	2.40	1320	1.55	388	2.05	840	3.40	3020	1.65	458	0.85	107	0.90	118	0.75	86	1.05	160	1.55	388	3.00	2340	1.60	420
27,	2.30	1170	1.95	728	1.95	728	2.45	1405	1.55	388	0.85	107	0.90	118	0.75	86	0.88	114	1.55	388	2.35	1245	1.60	420
28,	2.30	1170	†4.55	5140	1.85	628	2.05	840	1.45	328	0.85	107	0.88	114	0.70	77	0.80	96	1.35	278	2.00	780	1.60	420
29,	2.20	1030	-----	-------	1.75	538	1.85	628	1.35	278	0.82	100	0.82	100	0.70	77	0.80	96	1.55	388	2.30	1170	3.20	2680
30,	2.15	965	-----	-------	1.60	420	1.70	495	1.35	278	0.80	96	0.90	118	0.70	77	0.80	96	1.60	420	2.05	840	3.90	3900
31,	1.95	728	-----	-------	1.55	388	-----	-------	1.50	355	-----	-------	0.90	118	0.70	77	-----	-------	1.75	538	-----	-------	2.90	2170

*Maximum at 4 P. M., 4.2 feet. 4450 sec. ft.
†Maximum at 6 P. M., 5.0 feet. 6120 sec. ft.
‡Maximum at 11.30 P. M., 5.8 feet. 8240 sec. ft.
§Gage carried out by ice.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF OIL CREEK, AT ROUSEVILLE, VENANGO COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.15	965	2.10	900	1.55	388	1.95	728	1.60	420	0.90	118	1.00	145	0.60	60	1.40	300	3.00	2340	2.00	780	2.95	2255
2,	3.10	2510	1.95	728	1.65	458	1.95	728	2.10	900	.90	118	.90	118	.60	60	1.10	175	2.95	2255	1.75	538	1.95	728
3,	4.10	4260	1.75	538	1.55	388	1.75	538	2.00	780	.80	96	.80	96	.80	96	1.10	175	2.65	1745	1.50	355	1.90	675
4,	2.90	2170	1.95	728	1.40	300	1.90	675	1.80	580	.80	96	.80	96	.95	132	1.00	145	2.20	1030	1.40	300	1.80	580
5,	2.35	1245	1.80	580	1.35	278	3.30	2850	1.60	420	.90	118	.80	96	.90	118	1.00	145	2.05	840	1.50	355	1.70	495
6,	2.05	840	1.60	420	1.35	278	3.05	2425	1.50	355	.90	118	.80	96	.80	96	1.10	175	1.75	538	1.40	300	1.60	420
7,	1.95	728	1.60	420	1.20	210	2.90	2170	1.40	300	.90	118	.80	96	.80	96	1.30	255	2.10	900	1.70	495	1.50	355
8,	1.80	580	1.55	388	1.30	255	2.40	1320	1.30	255	.90	118	.90	118	.75	86	1.20	210	2.00	780	2.00	780	1.50	355
9,	1.90	675	1.45	328	1.25	232	2.15	965	1.30	255	.80	96	.80	96	.70	77	2.00	780	1.70	495	1.80	580	1.50	355
10,	1.70	495	1.40	300	1.90	675	2.15	965	1.20	210	.80	96	.70	77	.62	63	1.70	495	1.65	458	1.70	495	2.15	965
11,	1.65	458	1.30	255	2.10	900	2.05	840	1.20	210	.80	96	.75	86	.60	60	1.70	495	1.60	420	1.70	495	1.95	728
12,	4.00	4080	1.20	210	2.15	965	1.85	628	1.20	210	1.00	145	.85	107	.60	60	1.30	255	1.60	420	1.80	580	2.20	1030
13,	4.00	4080	1.25	232	2.30	1170	1.80	580	1.10	175	1.20	210	.75	86	.60	60	1.10	175	1.60	420	2.35	1245	3.85	3810
14,	4.50	5040	1.50	355	2.10	900	1.95	728	1.10	175	1.00	145	.70	77	.60	60	1.00	145	1.50	355	2.00	780	3.30	2850
15,	4.70	5460	3.15	2595	2.00	780	2.25	1100	1.00	145	.90	118	.70	77	.70	77	2.00	780	1.40	300	1.90	675	3.05	2425
16,	**3.00**	**2340**	2.75	1915	1.65	458	2.00	780	1.00	145	.80	96	.70	77	1.25	232	2.50	1490	1.30	255	1.90	675	3.00	2340
17,	2.40	1320	2.85	2085	1.55	388	1.90	675	1.00	145	.80	96	.70	77	.95	132	1.95	728	1.30	255	1.85	628	2.70	1830
18,	1.95	728	4.00	4080	1.80	580	1.75	538	1.10	175	.80	96	.70	77	.90	118	1.25	538	2.95	2255	3.50	3195	2.30	1170
	1.95	728	2.95	2255	1.70	495	**1.65**	458	1.00	145	.80	**96**	.70	77	.80	96	1.30	255	2.65	1745	3.60	3370	2.20	1030
20,	1.75	538	2.25	1100	1.65	458	2.65	1745	1.00	145	.70	77	.75	86	.70	77	1.20	210	1.95	728	3.50	3195	2.00	780
21,	1.80	580	2.05	840	2.25	1100	2.40	1320	1.10	175	.70	77	.75	86	.70	77	1.25	232	1.80	580	3.20	2680	1.90	675
22,	1.85	628	1.85	628	2.15	965	2.10	900	1.00	145	.70	77	.75	86	.62	63	1.10	175	1.70	495	3.00	2340	1.80	580
23,	1.60	420	1.70	495	2.15	965	2.20	1030	1.00	145	.70	77	.70	77	.60	60	1.10	175	1.70	495	2.90	2170	2.80	2000
24,	1.35	278	1.60	420	1.95	728	2.00	780	1.00	145	.70	77	.75	86	.75	86	1.10	175	1.60	420	3.20	2680	2.30	1170
25,	1.45	328	1.65	458	1.80	580	1.85	628	1.00	145	1.60	420	.75	86	1.10	175	1.00	145	1.50	355	3.25	2765	2.05	840
26,	1.40	300	1.75	538	1.95	728	1.70	495	.90	118	1.40	300	.70	77	1.30	255	1.10	175	1.45	328	3.05	2425	1.90	675
27,	1.60	420	2.05	840	2.55	1575	1.60	420	.90	118	1.50	355	.70	77	.95	132	1.20	210	1.30	255	2.90	2170	2.10	900
28,	4.95	6010	1.80	580	2.85	2085	1.50	355	.90	118	1.90	675	.70	77	1.35	278	1.45	328	1.30	255	3.05	2425	2.25	1100
29,	2.95	2255	-----	-------	2.30	1170	1.50	355	.90	118	1.40	300	.60	60	*4.55	5140	2.05	840	1.20	210	3.30	2850	2.00	780
30,	2.95	2255	-----	-------	2.15	965	1.65	458	.80	96	1.10	175	.60	60	2.35	1245	3.10	2510	1.20	210	3.30	2850	1.80	580
31,	**2.40**	**1320**	-----	-------	2.05	840	-----	-------	.80	96	-----	-------	.60	60	1.70	495	-----	-------	1.35	278	-----	-------	2.05	840

*Maximum 4.8 feet at 7 A. M., discharge, 5680 sec. ft.

ESTIMATED MONTHLY DISCHARGE OF OIL CREEK, AT ROUSEVILLE, VENANGO COUNTY.

(Drainage area 330 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1909.					
November,	675	74	163	0.494	0.551
December,	1170	77	157	.476	.549
1910.					
January,	4450	96			
February,	6120	255	637	1.930	2.010
March,	8240	388	2161	6.548	7.549
April,	3020	175	508	1.539	1.717
May,	2425	175	497	1.506	1.736
June,	1745	96	364	1.103	1.230
July,	160	92	110	.333	.384
August,	96	60	79	.239	.276
September,	160	63	92	.279	.311
October,	538	77	191	.579	.668
November,	2425	160	818	2.479	2.766
December,	3900	210	584	1.770	2.041
The year,	8240	60			
1911.					
January,	6010	278	1743	5.282	6.089
February,	4080	210	900	2.727	2.840
March,	2085	210	718	2.176	2.509
April,	2850	355	939	2.845	3.174
May,	900	96	244	.739	.852
June,	675	77	160	.485	.542
July,	145	60	87	.264	.304
August,	5680	60	318	.964	1.111
September,	2510	145	430	1.303	1.454
October,	2340	210	723	2.191	2.526
November,	3370	300	1506	4.564	5.092
December,	3810	355	1139	3.452	3.979
The year,	6010	60	742	2.249	30.472

NORTH BRANCH OF FRENCH CREEK.

DESCRIPTION OF BASIN.

The North Branch of French creek, the largest tributary of French creek, rises in the southwestern corner of New York State, in numerous tributaries, draining an area of approximately 217 square miles, 114 of which lie in New York State, and flows in a general westerly direction into Erie county, Penna., and thence continues in a general southerly direction to its junction with the south branch, at Leboeuf, Erie county, a distance of approximately 30 miles, the entire watershed lying north of the terminal morain.

The headwaters of this stream flow through broad, flat valleys, the side hills being low and rolling and covered with second growth timber. There are a few small lakes and swampy areas at the headwaters, the largest lake being Findley Lake, in New York State, near the New York-Pennsylvania state line. As the stream approaches its confluence with the south branch the hills become higher and the fall greater. Throughout the entire course it flows through a well populated, agricultural region. There are numerous small towns and boroughs in the watershed, the largest of which is Wattsburg.

The mean annual precipitation over this watershed is from 40 to 45 inches.

The discharge of this stream has been measured since May 4th, 1910, at Kimmeytown, about six miles above the mouth.

OHIO BASIN—STATION NO. 6.

NORTH BRANCH OF FRENCH CREEK AT KIMMEYTOWN, PA.

DESCRIPTION OF STATION.

This station was established by the Flood Commission of Pittsburg, on May 4th, 1910, and is located on the steel highway bridge at Kimmeytown, Erie county, about five miles above the mouth of the creek.

The channel is straight for a distance of about 300 feet above and 600 feet below the station. The banks are both subject to overflow at extreme high stages. The bed of the creek is gravelly and permanent.

Discharge measurements are taken from the downstream side of the bridge, at ordinary stages, and by wading, at a section 200 feet above the bridge, at extreme low stages. The initial point for soundings is outer face of cassion at left end of bridge.

A chain gage is fastened to the floor on the downstream side of the bridge. The length of chain from the bottom of the weight to the marker is 16.30 feet. The elevation of zero is 1235.70 feet. B. M. No. 1 is on west abutment, downstream side, top of cassion; elevation 1250.09 feet, or 14.39 feet above gage datum. The gage is read once daily by J. L. Carter.

Since the establishment of this station twelve discharge measurements have been made.

The following data have been furnished by the Flood Commission of Pittsburg.

DISCHARGE MEASUREMENTS OF NORTH BRANCH FRENCH CREEK, AT KIMMEYTOWN, ERIE COUNTY, PENNA.

(Drainage area 190 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.	
	1910.							
1	May 4,	Drake,	156	611	3.15	4.73	1753	Integration msmt.
2	May 28,	Drake,	124	118	1.24	1.20	139	Integration msmt.
3	June 13,	Drake,	131	127	2.51	1.90	345	Integration msmt.
4	Aug. 12,	Drake,	100	62	0.88	0.80	54	Surface msmt.
5	Oct. 29,	Drake,	140	316	2.15	2.74	680	Surface msmt.
6	Nov. 14,	Drake,	140	381	2.44	3.22	931	Surface msmt.
7	Dec. 31,	Drake,	155	553	2.92	4.41	1631	Surface msmt.
	1911.							
8	Jan. 3,	Drake,	168	882	3.55	6.51	3303	Surface msmt.
9	Jan. 14,	Drake,	168	842	3.62	6.36	3060	Surface msmt.
10	Jan. 14,	Drake,	168	1006	4.04	7.29	4065	Surface msmt.
11	June 21,	Drake,	100	57	1.30	0.91	75	Wading msmt.
	1912.							
12	July 24,	Boehringer,	116	52	0.96	0.87	50	Wading msmt.

DISCHARGE TABLE FOR NORTH BRANCH FRENCH CREEK, AT KIMMEYTOWN, ERIE COUNTY, FROM MAY 16, 1910.

(Drainage area 190 square miles.)

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.60	26	.10	414	.60	1120	.10	2060	.60	3320
.70	32	.20	450	.70	1180	.20	2140	.70	3420
.80	46	.30	490	.80	1240	.30	2220	.80	3520
.90	64	.40	530	.90	1300	.40	2300	.90	3630
1.00	86	.50	572	4.00	1360	.50	2380	7.00	3740
.10	108	.60	616	.10	1420	.60	2460	.10	3850
.20	132	.70	662	.20	1480	.70	2540	.20	3970
.30	160	.80	710	.30	1540	.80	2620	.30	4090
.40	188	.90	760	.40	1600	.90	2700	.40	4210
.50	216	3.00	810	.50	1660	6.00	2780	.50	4340
.60	246	.10	860	.60	1720	.10	2870	.60	4470
.70	276	.20	910	.70	1780	.20	2960	.70	4600
.80	310	.30	960	.80	1850	.30	3050		
.90	344	.40	1010	.90	1920	.40	3140		
2.00	378	.50	1060	5.00	1990	.50	3230		

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH FRENCH CREEK, AT KIMMEYTOWN, ERIE COUNTY, PENNA.

1910. Day.	MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G. H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	----	----	2.35	510	0.82	50	0.71	33	0.8	46	0.7	32	2.9	760	2.7	662
2,	----	----	2.95	785	0.82	50	0.71	33	0.8	46	0.7	32	4.9	1920	2.7	662
3,	----	----	3.15	885	0.82	50	0.71	33	0.9	64	0.7	32	4.3	1540	2.5	572
4,	----	----	1.95	361	0.72	35	0.71	33	1.1	108	0.8	46	3.0	810	*2.5	572
5,	----	----	1.95	361	0.72	35	0.71	33	1.3	160	0.8	46	2.2	450	2.4	530
6,	----	----	2.25	470	0.72	35	0.71	33	2.9	760	0.8	46	*2.1	414	2.3	490
7,	----	----	2.35	510	0.82	50	0.71	33	2.9	760	0.8	46	1.9	344	2.4	530
8,	----	----	2.14	428	0.82	50	0.71	33	1.9	344	1.3	160	2.0	378	2.2	450
9,	----	----	1.84	324	0.71	33	0.81	48	1.3	160	1.2	132	2.4	530	2.3	490
10,	----	----	1.64	258	0.71	33	1.0	86	1.8	310	1.0	86	4.9	1920	2.2	450
11,	----	----	1.74	290	0.71	33	0.9	64	1.7	276	1.0	86	9.3	‡7000	*2.1	414
12,	----	----	2.24	466	0.81	48	0.9	64	1.6	246	0.8	46	5.0	1990	2.1	414
13,	----	----	1.94	358	0.91	66	0.8	46	1.5	216	0.8	46	*4.1	1420	2.1	414
14,	----	----	1.53	225	1.01	88	0.7	32	1.3	160	0.7	32	3.2	910	2.3	490
15,	----	----	1.33	168	1.01	88	0.7	32	1.2	132	0.8	46	3.1	860	2.2	450
16,	1.18	127	1.23	140	1.01	88	0.7	32	1.0	86	0.8	46	2.9	760	2.4	530
17,	1.18	127	1.03	93	1.11	110	0.9	64	0.9	64	0.8	46	2.8	710	2.9	760
18,	1.27	152	1.13	115	0.91	66	0.8	46	0.8	46	0.7	32	2.7	662	*2.9	760
19,	1.27	152	1.03	93	0.91	66	0.7	32	0.8	46	0.7	32	2.6	616	2.9	760
20,	1.17	125	1.03	93	0.91	66	0.7	32	0.8	46	0.7	32	*2.5	572	3.1	860
21,	1.17	125	0.93	71	1.01	88	0.7	32	0.7	32	0.7	32	2.4	530	3.2	910
22,	1.17	125	0.83	51	1.01	88	0.7	32	0.7	32	0.9	64	2.3	490	3.2	910
23,	1.27	152	0.93	71	0.91	66	0.7	32	0.8	46	1.1	108	2.3	490	3.1	860
24,	1.26	149	0.93	71	0.91	66	0.7	32	0.8	46	1.2	132	3.4	1010	3.4	1010
25,	1.36	177	0.92	68	0.91	66	0.7	32	0.7	32	1.3	160	4.3	1540	*3.6	1120
26,	1.46	205	0.82	50	0.81	48	0.8	46	0.7	32	1.9	344	4.5	1660	3.8	1240
27,	1.26	149	0.82	50	0.81	48	0.7	32	0.7	32	1.7	276	*3.7	1180	3.7	1180
28,	1.16	122	0.82	50	0.71	33	0.7	32	0.7	32	2.2	450	2.8	710	3.4	1010
29,	1.05	97	0.82	50	0.71	33	0.7	32	0.8	46	2.8	710	3.1	860	4.9	1920
30,	1.15	120	0.82	50	0.71	33	0.7	32	0.8	46	2.6	616	2.8	710	4.8	1850
31,	2.25	470	------	------	0.71	33	0.7	32	------	------	2.4	530	------	------	4.4	1600

*Interpolated. ‡Estimated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NORTH BRANCH FRENCH CREEK, AT KIMMEYTOWN, ERIE, COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	*4.5	1660	2.9	760	2.0	378	2.5	572	2.3	490	0.9	64	0.9	64	0.7	32	1.5	216	*3.9	1300	2.2	450	3.1	860
2,	4.6	1720	2.4	530	2.0	378	*2.4	530	2.7	662	*0.9	64	*0.8	46	0.7	32	1.3	160	4.4	1600	2.2	450	2.7	662
3,	6.5	3230	2.2	450	1.8	310	2.2	450	2.7	662	1.0	86	0.8	46	1.1	108	*1.2	132	3.2	910	2.3	490	*2.45	551
4,	5.0	1990	2.1	414	1.5	216	2.3	490	2.2	450	*1.0	86	0.8	46	0.9	64	1.1	108	2.6	616	2.0	378	2.2	450
5,	3.6	1120	*2.0	378	*1.5	216	4.8	1850	1.8	310	1.1	108	0.8	46	0.9	64	1.1	108	3.5	1060	*1.85	327	2.2	4.5
6,	3.3	960	1.9	344	1.6	246	5.5	2380	1.6	246	1.3	160	0.8	46	*0.9	64	1.8	310	2.5	572	1.7	276	2.1	414
7,	3.0	810	1.9	344	1.3	160	4.7	1780	*1.5	216	1.2	132	0.8	46	1.0	86	2.1	414	3.2	910	2.4	530	2.1	414
8,	2.8	710	2.0	378	1.4	188	3.6	1120	1.4	188	1.1	108	0.8	46	0.9	64	1.7	276	*2.8	710	4.1	1420	2.1	414
9,	2.7	662	1.7	276	*1.7	276	*3.4	1010	1.2	132	1.0	86	0.8	46	0.8	46	1.4	188	2.4	530	3.1	860	3.1	860
10,	2.9	760	1.7	276	3.1	860	2.8	710	1.3	160	1.0	86	0.8	46	0.8	46	*1.9	160	1.9	344	2.4	530	*3.55	1090
11,	2.6	616	1.6	246	3.2	910	2.5	572	1.3	160	*1.1	108	0.8	46	0.8	46	1.2	132	1.9	344	2.3	490	4.0	1360
12,	6.9	3630	*1.6	246	*3.6	1120	2.2	450	1.3	160	1.4	188	0.7	32	0.8	46	1.2	132	1.8	310	*2.85	735	4.3	1540
13,	6.8	3520	1.6	246	3.9	1300	2.0	378	1.4	188	1.3	160	0.7	32	*0.8	46	1.1	108	1.7	276	3.4	1010	6.1	2870
14,	6.2	2960	1.6	246	3.4	1010	2.0	378	*1.3	160	1.2	132	0.7	32	0.7	32	1.1	108	1.6	246	3.2	910	5.0	1990
15,	7.4	4210	4.3	1540	3.1	860	2.4	530	1.2	132	1.2	132	0.7	32	0.7	32	1.9	344	*1.5	216	3.1	860	4.4	1600
16,	4.4	1600	3.9	1300	2.2	450	*2.2	450	1.2	132	1.1	108	*0.8	46	1.7	276	4.0	1360	1.4	188	2.9	760	4.2	1480
17,	3.7	1180	4.4	1600	3.2	910	1.9	344	1.2	132	1.0	86	0.8	46	1.6	246	2.8	710	1.3	160	2.8	710	3.1	860
18,	3.0	810	8.7	†5800	2.2	450	1.8	310	1.1	108	*1.2	132	0.8	46	1.4	188	1.8	310	4.4	1600	6.4	3140	3.1	860
19,	2.9	760	4.7	1780	*2.1	414	1.7	276	1.2	132	1.3	160	0.8	46	1.1	108	1.4	188	3.9	1300	*5.15	2100	2.6	616
20,	2.7	662	3.4	1010	2.1	414	3.7	1180	1.1	108	1.1	108	0.8	46	*1.0	86	1.5	216	2.8	710	3.9	1300	2.3	490
21,	2.7	662	2.5	572	3.4	1010	3.4	1010	*1.1	108	1.0	86	0.9	64	0.9	64	1.4	188	2.2	450	3.2	910	2.1	414
22,	*2.6	616	2.2	450	3.4	1010	2.5	572	1.0	86	0.9	64	0.9	64	0.8	46	1.4	188	*2.2	450	2.8	710	2.6	616
23,	2.6	616	2.1	414	4.0	1360	*2.3	490	1.1	108	0.8	46	*0.8	46	0.8	46	1.3	160	2.2	450	2.7	662	4.1	1420
24,	2.2	450	2.3	490	2.9	760	2.0	378	1.2	132	0.8	46	0.8	46	0.8	46	*1.3	160	2.2	450	3.4	1010	*3.4	1010
25,	2.2	450	2.0	378	2.4	530	1.8	310	1.1	108	0.8	46	0.8	46	0.9	64	*1.2	132	2.0	378	3.9	1300	2.7	662
26,	1.8	310	*2.5	572	*3.0	810	1.6	246	1.1	108	0.9	64	0.8	46	1.0	86	1.2	132	1.6	246	*3.4	1010	2.4	530
27,	5.85	2660	3.0	810	3.4	1010	1.5	216	1.0	86	0.9	64	0.7	32	*1.0	86	1.1	108	1.6	246	2.9	760	3.0	810
28,	a10.7	†8800	2.5	572	4.9	1920	1.4	188	*1.0	86	1.1	108	0.7	32	1.0	86	1.4	188	1.6	246	3.1	860	2.7	662
29,	5.3	2220	------	------	3.2	910	1.4	188	0.9	64	1.0	86	0.7	32	*3.9	1300	3.7	1180	*1.6	246	5.8	2620	2.4	530
30,	4.9	1920	------	------	3.0	810	*1.3	160	0.9	64	0.9	64	0.8	46	2.8	710	3.4	1010	1.6	246	3.8	1240	2.2	450
31,	3.4	1010	------	------	2.6	616	------	------	0.9	64	------	------	0.7	32	1.9	344	------	------	7.6	246	------	------	*2.95	785

a 11.40 at 7.40 A. M.=9800 sec.-ft.
* Interpolated.
† Estimated.

ESTIMATED MONTHLY DISCHARGE OF NORTH BRANCH FRENCH CREEK AT KIMMEYTOWN, ERIE COUNTY.

(Drainage area 190 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1910.					
June,	885	50	250	1.316	1.469
July,	110	33	56	0.295	0.340
August,	86	32	39	0.205	0.236
September,	760	32	148	0.779	0.869
October,	710	32	146	0.768	0.886
November,	‡7000	344	1125	5.921	6.606
December,	1850	414	802	4.221	4.866
‡Estimated.					
1911.					
January,	‡9800	310	1719	9.047	10.430
February,	‡5800	246	801	4.216	4.890
March,	1920	160	704	3.705	4.272
April,	2380	160	642	3.379	3.770
May,	662	64	192	1.011	1.165
June,	188	46	99	0.521	0.581
July,	64	32	44	0.232	0.267
August,	1300	32	148	0.779	0.898
September,	1300	108	304	1.600	1.785
October,	1600	160	566	2.979	3.435
November,	3140	276	960	5.053	5.637
December,	2870	414	894	4.705	5.424
The year,	‡9800	32	589	3.102	42.054

‡Estimated.

CUSSEWAGO CREEK.

DESCRIPTION OF BASIN.

Cussewago creek, one of the largest tributaries of French creek, draining ninety-two square miles, rises in the southern part of Erie county and flows in a general southerly direction, through Erie and Crawford counties, for a distance of about twenty miles, to the parent stream opposite Meadville. This creek follows a tortuous course and the flow is sluggish throughout its entire length, passing through a wild, shallow, drift filled valley, the side hills of which often rise abruptly from the plains, with numerous small tributaries coming in from the east and the west. The watershed lies entirely within the glacial area, the hills being low, rolling, and largely deforested, while the basin is well populated by an agricultural community.

The mean annual precipitation over this watershed is from 40 to 45 inches.

The discharge of this creek has been measured since May 2nd, 1910, at Jones' Farm, above Meadville, Crawford county.

OHIO BASIN—STATION NO. 7.

CUSSEWAGO CREEK AT JONES' FARM, ABOVE MEADVILLE, PA.

DESCRIPTION OF STATION.

This station was established on May 2nd, 1910, by the Flood Commission of Pittsburg, who have been operating it since that date. It is located on the steel highway bridge near Jones' Farm, four and one-half miles above Meadville.

The channel above and below the station bends to the left. Both banks are subject to overflow at a gage height of about eight feet. The bed is soft and not permanent.

Discharge measurements are taken from the downstream side of the bridge, the initial point for soundings being the outer edge of the left abutment.

Originally a staff gage was attached to the right abutment, but as this was out of water at low stages, a chain gage was installed on June 6th, 1910. The length of the chain from the bottom of the weight to the marker is 14.61 feet. The elevation of zero is 1071.77 feet. Bench mark No. 1 is on top of upstream side of left abutment; elevation 1085.40 feet, or 13.63 feet above gage datum. The gage is read once daily by J. E. Hofius.

This is not an entirely satisfactory location for a station, but no better point could be found on the creek, as the same conditions prevail throughout its whole length.

Since the establishment of this station eleven discharge measurements have been made.

The following data have been furnished by the Flood Commission of Pittsburg.

DISCHARGE MEASUREMENTS OF CUSSEWAGO CREEK ABOVE MEADVILLE, CRAWFORD COUNTY, PENNA.

(Drainage area 90 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.	
1	1910. May 3,	Drake,	90	459	1.18	7.95	540	
2	May 28,	Drake,	30	44	0.63	2.10	26	
3	June 13,	Drake,	28	59	0.80	2.50	47	
4	Aug. 12,	Drake,	23	9.5	0.43	0.83	4	Surface msmt.
5	Oct. 28,	Drake,	65	155	0.87	4.20	134	Surface msmt.
6	Oct. 28,	Drake,	65	161	0.97	4.34	154	Surface msmt.
7	Nov. 13,	Drake,	254	-------	------	9.12	688	Creek overflowing road. Surface msmt.
8	Nov. 15,	Drake,	90	430	0.97	7.53	418	Surface msmt.
9	Nov. 23,	Drake,	90	252	0.90	5.63	226	Surface msmt.
10	1911. June 21,	Drake,	21	14	0.54	1.01	6	0.6 msmt. Wading.
11	1912. July 24,	Boehringer,	18	12	0.55	0.87	7	0.6 msmt. Wading.

DISCHARGE TABLE FOR CUSSEWAGO CREEK NEAR MEADVILLE, CRAWFORD COUNTY, FROM MAY 3, 1910.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.50	2	.50	43	.50	154	.50	304	.50	599
.60	3	.60	48	.60	160	.60	314	.60	620
.70	4	.70	53	.70	166	.70	324	.70	641
.80	5	.80	58	.80	172	.80	335	.80	663
.90	6	.90	63	.90	179	.90	346	.90	686
1.00	7	3.00	68	5.00	186	7.00	357	9.00	709
.10	8	.10	73	.10	193	.10	368	.10	732
.20	9	.20	78	.20	200	.20	380	.20	756
.30	10	.30	83	.30	207	.30	392	.30	780
.40	12	.40	88	.40	214	.40	405	.40	806
.50	14	.50	94	.50	221	.50	419	.50	833
.60	16	.60	100	.60	228	.60	434	.60	861
.70	18	.70	106	.70	236	.70	450	.70	890
.80	20	.80	112	.80	244	.80	466	.80	920
.90	23	.90	118	.90	252	.90	483	.90	950
2.00	26	4.00	124	6.00	260	8.00	501	10.00	980
.10	29	.10	130	.10	268	.10	519	.10	1010
.20	32	.20	136	.20	276	.20	538	.20	1040
.30	35	.30	142	.30	285	.30	558	.30	1070
.40	39	.40	148	.40	294	.40	578	.40	1100

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CUSSEWAGO CREEK, NEAR MEADVILLE, CRAWFORD COUNTY, PENNA.

1910. Day.	MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	3.20	78	0.76	5	1.32	10	0.54	2	0.82	5	6.90	346	7.80	466
2,	------	------	5.50	221	0.86	4	1.07	8	1.04	7	0.72	4	7.40	405	6.15	272
3,	7.95	492	7.20	380	0.76	5	0.87	6	1.14	8	0.67	4	7.90	483	5.90	252
4,	8.45	588	7.85	474	0.76	5	0.77	5	1.79	20	0.62	3	8.40	578	5.85	248
5,	9.35	793	8.10	519	0.71	4	0.72	4	1.74	19	0.62	3	8.20	538	5.80	244
6,	8.50	599	4.34	144	0.71	4	0.72	4	1.24	9	0.62	3	5.40	214	5.80	244
7,	4.35	145	3.69	105	0.76	5	0.67	4	1.14	8	2.82	59	3.80	112	5.50	221
8,	3.35	86	3.79	111	0.96	7	0.62	3	1.04	7	4.52	155	4.20	136	5.35	210
9,	3.05	70	3.04	70	0.86	6	0.66	4	1.13	8	3.02	69	5.30	207	5.00	186
10,	3.00	68	2.49	43	0.81	5	0.81	5	0.98	7	2.02	27	6.50	304	5.30	207
11,	2.90	63	2.19	32	*0.80	5	0.81	5	0.98	7	1.61	16	8.30	558	4.40	148
12,	2.50	43	2.44	41	*0.75	4	0.86	6	0.98	7	1.51	14	9.70	890	4.40	148
13,	2.35	37	2.59	48	*0.70	4	0.76	5	0.88	6	1.21	9	9.40	806	4.30	142
14,	2.35	37	2.28	34	*0.75	4	0.65	4	0.73	4	1.11	7	8.70	641	4.30	142
15,	2.25	34	1.88	22	*0.75	4	0.65	4	0.73	4	0.91	6	7.65	442	4.35	145
16,	2.25	34	1.58	16	0.79	5	0.55	2	0.68	4	0.91	6	7.10	368	4.20	136
17,	2.25	34	1.48	14	0.79	5	0.55	2	0.63	3	0.86	6	6.80	335	4.10	130
18,	2.25	34	1.38	12	0.74	4	0.55	2	0.63	3	0.86	6	6.70	324	4.10	130
19,	2.45	41	1.28	10	0.69	4	0.55	2	0.58	3	0.81	5	6.20	276	4.05	127
20,	2.35	37	1.18	9	0.69	4	0.50	2	0.58	3	0.81	5	5.90	252	4.50	154
21,	2.25	34	1.07	8	0.64	3	0.50	2	0.58	3	0.76	5	5.70	236	4.80	172
22,	2.25	34	1.07	8	0.59	3	0.50	2	0.53	2	1.11	8	5.50	221	4.80	172
23,	2.25	34	1.02	7	0.64	3	0.50	2	0.53	2	2.06	28	5.50	221	4.80	172
24,	2.95	66	0.92	6	0.68	4	0.50	2	0.53	2	2.11	29	6.90	346	5.50	221
25,	2.55	46	0.87	6	0.68	4	0.50	2	0.98	7	1.91	23	8.50	599	6.90	346
26,	2.60	48	0.87	6	1.83	21	0.55	2	1.42	12	3.81	113	9.80	920	7.60	434
27,	2.65	50	0.87	6	1.28	10	0.55	2	1.12	8	4.71	167	9.50	833	7.70	450
28,	2.35	37	0.82	5	0.93	6	0.60	3	1.12	8	4.06	128	9.10	732	7.10	308
29,	2.25	34	0.82	5	0.78	5	0.65	4	0.87	6	5.40	214	7.90	483	8.00	501
30,	2.25	34	0.82	5	0.78	5	0.60	3	0.87	6	6.40	294	7.60	434	9.00	709
31,	2.25	34	------	------	1.98	25	0.60	3	------	------	6.55	309	------	------	10.30	1070

*Gage out. Interpolated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CUSSEWAGO CREEK NEAR MEADVILLE, CRAWFORD COUNTY.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	9.78	914	5.46	218	4.28	141	5.96	257	2.94	65	1.02	7	1.50	14	.59	3	4.68	165	7.77	461	5.26	204	7.35	398
2,	9.38	801	4.96	183	3.78	111	5.36	211	5.34	210	1.22	9	1.50	14	.59	3	2.38	38	8.57	614	5.46	218	6.05	264
3,	10.38	1094	4.96	183	3.18	77	4.66	164	4.94	162	1.02	7	1.00	7	.59	3	1.43	13	8.47	593	4.91	180	3.95	121
4,	*10.00	980	4.56	158	3.08	72	4.16	134	3.54	96	1.02	7	1.00	7	.59	3	1.38	12	8.77	656	4.46	152	3.75	109
5,	9.48	828	4.61	161	2.98	67	6.86	342	2.84	80	1.12	8	.90	6	.59	3	1.18	9	6.97	354	4.26	140	3.45	91
6,	8.68	637	3.76	110	2.78	57	7.96	494	2.44	41	1.12	8	.80	5	.89	6	1.98	25	3.97	122	3.96	122	3.45	91
7,	5.68	234	3.86	116	2.78	57	8.26	550	2.44	41	1.62	16	1.90	23	.79	5	2.98	67	5.97	258	5.36	211	3.45	91
8,	5.61	229	3.46	92	2.78	57	7.26	387	1.94	24	1.42	12	1.10	8	.74	4	2.83	60	6.67	321	6.96	353	3.30	83
9,	5.51	222	3.06	71	2.78	57	5.21	201	1.74	19	1.32	10	.85	5	.69	4	1.98	25	5.67	234	7.06	364	5.75	240
10,	6.16	273	2.81	58	4.08	129	4.71	167	1.74	19	1.22	9	.80	5	.69	4	1.78	20	3.47	92	5.66	233	6.00	260
11,	5.86	249	2.66	51	6.48	202	4.46	152	1.84	21	1.02	7	.75	4	.59	3	1.48	14	3.07	72	4.96	183	5.75	240
12,	8.56	612	2.46	41	5.38	213	3.76	110	1.84	21	1.02	7	1.00	7	.59	3	1.48	14	3.07	72	5.56	225	5.65	232
13,	10.46	1118	2.56	46	5.28	206	3.66	104	2.14	30	4.62	161	.90	6	.59	3	1.38	12	2.97	66	6.96	353	8.00	501
14,	*10.40	1100	2.56	46	4.98	185	3.66	104	1.94	24	3.62	101	.75	4	.49	2	1.28	10	2.77	56	7.66	444	8.75	652
15,	10.36	1088	7.96	494	4.58	159	4.06	128	1.74	19	2.52	44	.75	4	.59	3	6.08	266	2.57	46	5.46	218	9.25	768
16,	9.56	850	9.56	850	3.87	116	3.95	121	1.53	15	1.92	24	.70	4	.89	6	8.88	681	2.47	42	5.46	218	8.65	630
17,	8.96	700	9.26	770	3.17	76	3.25	80	1.43	13	1.02	7	.70	4	.99	7	9.68	884	2.27	34	5.36	211	8.30	558
18,	6.76	331	*7.40	405	3.57	98	2.85	60	1.68	18	1.12	8	.75	4	.99	7	8.83	670	7.57	430	7.96	494	7.05	362
19,	4.66	164	*6.60	314	3.87	116	2.65	50	1.93	24	1.02	7	.75	4	.89	6	4.88	178	10.17	1031	10.16	1028	4.75	169
20,	3.56	98	*6.30	285	4.77	170	4.65	163	1.83	21	1.02	7	.75	4	.79	5	3.08	72	9.37	798	9.36	796	3.85	115
21,	3.86	116	5.89	251	5.57	226	7.25	386	2.73	54	1.10	8	.70	4	.69	4	2.88	62	*6.00	260	8.36	570	3.35	86
22,	4.06	128	4.59	159	5.27	205	5.05	190	1.63	17	1.10	8	.70	4	.69	4	2.18	31	4.17	134	6.36	290	3.45	91
23,	4.16	134	4.79	171	4.67	164	3.95	121	1.43	13	1.10	8	.70	4	.69	4	1.98	25	3.87	116	4.96	183	6.35	290
24,	3.46	92	4.49	153	5.27	205	3.55	97	1.53	15	1.00	7	.70	4	.69	4	1.78	20	3.77	110	6.06	265	7.15	374
25,	2.76	56	4.49	153	4.77	170	2.95	66	1.43	13	1.00	7	.75	4	.74	4	1.68	18	3.57	98	6.36	290	6.35	290
26,	2.56	46	4.59	159	4.02	125	2.55	46	1.33	11	0.90	6	.75	4	.79	5	1.78	20	3.27	82	7.16	375	4.55	157
27,	3.76	110	5.99	259	4.77	170	2.25	34	1.23	9	1.80	20	.70	4	.79	5	1.48	14	2.87	62	5.91	253	5.15	196
28,	8.96	700	6.29	284	6.87	343	1.95	24	1.03	7	3.10	73	.75	4	.89	6	2.38	38	2.77	56	6.16	273	5.35	210
29,	9.76	908	......	......	6.37	291	1.95	24	1.63	7	4.40	148	.75	4	5.09	192	4.38	147	3.17	76	7.06	364	4.25	139
30,	9.36	796	......	......	5.47	219	2.35	37	1.03	7	2.70	53	.70	4	7.49	418	6.98	355	2.97	66	7.76	460	4.35	145
31,	8.56	612	......	......	6.42	296	......	......	0.83	5	......	......	.65	4	8.29	556	......	......	2.92	64	......	......	4.95	182

*Interpolated.

ESTIMATED MONTHLY DISCHARGE OF CUSSEWAGO CREEK NEAR MEADVILLE, CRAWFORD COUNTY.

(Drainage area 90 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1910.					
May 3-31,	793	34			
June,	519	5	82	0.911	1.016
July,	25	3	5.9	0.066	0.076
August,	10	2	3.7	0.041	0.047
September,	20	2	6.5	0.072	0.080
October,	309	3	56	0.622	0.717
November,	920	112	441	4.900	5.467
December,	1070	127	276	3.067	3.536
1911.					
January,	1118	46	523	5.811	6.699
February,	850	41	223	2.478	2.580
March,	343	57	157	1.744	2.011
April,	550	24	167	1.856	2.071
May,	210	5	36	.400	.461
June,	161	6	27	.300	.335
July,	23	4	6	.067	.077
August,	556	2	41	.456	.526
September,,	884	9	132	1.467	1.637
October,	1031	34	241	2.678	3.088
November,	1028	122	322	3.578	3.992
December,	768	83	263	2.922	3.368
The year,	1118	2	178	1.980	26.845

FRENCH CREEK.

DESCRIPTION OF BASIN.

French creek, in northwestern Pennsylvania, is one of the largest feeders of the Allegheny river, draining approximately 1,249 square miles, of which about 114 lie in New York State. It rises in the plateau in the southwestern corner of New York State, and flows approximately 25 miles southwesterly to the Pennsylvania line, crossing it into Erie county, Penn'a., 17 miles south of Lake Erie. From this point the stream continues in a general southwesterly direction through Erie and Crawford counties, cutting across the northeast corner of Mercer county into Venango, it follows a southeasterly course to its mouth at Franklin, the total length being about 100 miles. This stream throughout its entire length flows through a well inhabited, agricultural country, almost deforested, and containing in its basin many important and thriving communities. In general this stream flows through a broad valley, bounded by rolling hills and is tortuous in its course, flowing slowly with a gentle slope, often through long deep pools. From where it enters Venango county, however, to its mouth, a distance of 12½ miles, the fall is steeper, often broken by rapids, the hills on either side being higher. The source of French creek lies at an approximate elevation of 1,700 feet, and to Le Bouef, 12 miles below, the Pennsylvania State line, it falls at the rate of 14 feet per mile; thence to the Mercer-Venango County line, a distance of 50 miles, the rate is about three feet per mile, and from this point to the mouth, approximately 12 miles, the rate of fall is 8 feet per mile. All but a small section of this Basin near the mouth, lies within the glacial area, and at Cambridge Springs, where the valley of the creek for about eight miles above and below the town is extremely broad and flat, is said to have been formerly the bed of a large glacial lake. There are many mineral springs in this section of the drainage basin. Throughout the entire drainage area of French creek are numerous lakes, ponds and swamps from which the tributaries of the stream emanate. The Conneaut Lake, said to be the largest in Pennsylvania, lies in this watershed. The principal tributaries are—South Branch, Le Bóeuf, Conewago creek, Conneautee creek, Muddy creek, Conneaut creek, Woodcock creek and Big Sugar creek. Numerous domestic and industrial water supplies are obtained from

French creek and its tributaries. This creek at one time was extensively used by grist and flouring mills for power purposes, all but a few of these plants having been abandoned. At one period a state canal followed the lower portion of this stream.

The mean annual precipitation over this watershed is from 40 to 45 inches.

The discharge has been measured since April 29th, 1908, at Carlton, about thirteen miles above the mouth.

OHIO BASIN—STATION NO. 8.

FRENCH CREEK AT CARLTON, PA.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania on April 29th, 1908, and is located on a two span, steel, through truss, highway bridge near the Erie railroad station at Carlton.

The channel above and below the station is a gradual curve to the left, there being an old dam 800 feet upstream and a dam a mile and one-half downstream. The right bank is high and not subject to overflow, while the left bank is low and water passes around for a width of 400 feet, being several feet deep. This low section is about eight feet below the floor of the bridge. The bed is of sand, gravel and boulders and is permanent. There are a few trees and bushes in the channel near the left bank.

Discharge measurements are made from the downstream side of the bridge and by wading during extreme low stages. The initial point for soundings is end of upper angle of downstream hand-rail at right bank.

A ten foot staff gage is fastened to the downstream face of the pier. The elevation of zero is arbitrary datum. Bench mark No. 1 is right hand, downstream corner of centre pier coping; elevation, 17.58 feet above gage datum. The gage is read twice daily by E. E. Dean.

Since the establishment of this station 27 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF FRENCH CREEK AT CARLTON, MERCER COUNTY, PENNA.

(Drainage area 1070 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.	
	1908.							
1	Mar. 19,	Kenneth Grant,	265	1592	4.50	6.74	7170	Surface measurement.
2	May 14,	Kenneth Grant,	189	385	2.61	2.03	1006	
3	Aug. 24,	Stevens,	132	75	1.33	0.12	100	
4	Sept. 27,	Gannett & Ryder,	110	82	0.78	0.04	64	Wading measurement 150 feet below bridge.
	1909.							
5	Feb. 25,	Stevenson,	263	2112	5.32	8.76	11232	
6	May 1,	Langenheim,	255	2690	7.45	11.10	20043	Coef.=0.93.
7	May 2,	Langenheim,	255	2791	7.50	11.48	20959	Coef.=0.93.
8	May 3,	Langenheim,	255	2466	6.34	10.18	15693	Coef.=0.92.
9	May 3,	Langenheim,	255	2329	5.94	9.73	13840	Coef.=0.91.
10	May 3,	Langenheim,	255	2228	5.92	9.25	13214	Coef.=0.91.
11	May 4,	Langenheim,	255	1802	5.09	7.63	9176	
12	May 4,	Langenheim,	255	1665	5.04	7.08	8391	
13	May 4,	Langenheim,	244	1524	4.81	6.60	7338	
14	May 5,	Langenheim,	244	1276	4.35	5.53	5551	
15	May 5,	Langenheim,	244	1184	4.36	5.15	5163	
16	July 24,	Kenneth Grant,	------	-------	------	0.37	213	Wading measurement under bridge.
	1910.							
17	Mar. 1,	Drake,	262	2176	4.41	9.45	9604	Bearing probably tightened discharge too low.
18	Mar. 12,	Drake,	242	1060	4.10	5.00	4357	
19	April 8,	Drake,	185	397	2.41	2.00	957	
20	May 5,	Drake,	258	1432	3.76	6.60	5385	Bearing probably tightened discharge too low.
21	May 31,	Drake,	165	259	1.85	1.30	480	
22	June 12,	Drake,	179	357.5	2.48	1.80	888	
23	Aug. 11,	Drake,	136	98.6	1.69	0.29	167	
24	Nov. 3,	Drake,	240	1190	4.31	5.70	5129	
25	Nov. 17,	Drake,	218	908	4.03	4.42	3657	
	1911.							
26	Oct. 27,	Ryder,	192	484	2.37	2.50	1149	
	1912.							
27	July 25,	Boehringer,	161	171	1.62	0.83	277	

DISCHARGE TABLE FOR FRENCH CREEK AT CARLTON, MERCER COUNTY, FROM APRIL 29, 1908.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet	Sec. ft.	Feet	Sec. ft.	Feet	Sec. ft.	Feet	Sec. ft.	Feet	Sec. ft.
—.10	75	.40	1300	.90	4350	.40	8720	.80	14620
0.00	90	.50	1390	5.00	4500	.50	8920	.90	14960
.10	105	.60	1480	.10	4650	.60	9120	10.00	15300
.20	125	.70	1570	.20	4800	.70	9320	.10	15670
.30	145	.80	1670	.30	4960	.80	9520	.20	16070
.40	170	.90	1775	.40	5120	.90	9720	.30	16470
.50	195	3.00	1880	.50	5280	8.00	9920	.40	16880
.60	220	.10	1985	.60	5450	.10	10120	.50	17300
.70	250	.20	2095	.70	5620	.20	10330	.60	17730
.80	280	.30	2210	.80	5790	.30	10550	.70	18180
.90	320	.40	2325	.90	5960	.40	10780	.80	18630
1.00	365	.50	2445	6.00	6130	.50	11010	.90	19100
.10	410	.60	2565	.10	6300	.60	11250	11.00	19600
.20	460	.70	2685	.20	6480	.70	11500	.10	20100
.30	520	.80	2810	.30	6660	.80	11750	.20	20600
.40	580	.90	2940	.40	6840	.90	12000	.30	21100
.50	640	4.00	3070	.50	7020	9.00	12250	.40	21600
.60	705	.10	3200	.60	7200	.10	12520	.50	22100
.70	770	.20	3340	.70	7380	.20	12800	.60	22650
.80	835	.30	3480	.80	7560	.30	13100	.70	23200
.90	905	.40	3620	.90	7740	.40	13400	.80	23800
2.00	980	.50	3760	7.00	7930	.50	13700	.90	24400
.10	1055	.60	3900	.10	8120	.60	14000	12.00	25000
.20	1135	.70	4050	.20	8320	.70	14300		
.30	1215	.80	4200	.30	8520				

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRENCH CREEK, AT CARLTON, MERCER COUNTY, PENNA.

1908. Day.	APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	-----	-----	2.25	1175	3.75	2745	1.70	770	.60	220	.00	90	—0.05	80	+0.05	95	.20	125
2,	-----	-----	3.95	3005	3.35	2270	1.75	800	.50	195	.00	90	.00	80	.00	90	.20	125
3,	-----	-----	5.55	5365	2.65	1525	1.65	740	.50	195	.00	90	.00	80	.00	90	.20	125
4,	-----	-----	5.65	5535	2.25	1175	1.50	640	.40	170	.00	90	.00	80	.00	90	.20	125
5,	-----	-----	5.10	4650	1.85	870	1.75	800	.55	110	.00	90	—0.02	87	.00	90	.20	125
6,	-----	-----	4.00	3070	1.60	705	1.45	610	1.00	365	.00	90	—0.08	78	.00	90	.20	125
7,	-----	-----	3.15	2040	1.25	490	1.25	490	1.15	435	.00	90	0.10	75	.00	90	.30	145
8,	-----	-----	4.45	3690	1.20	460	1.40	580	1.00	365	.00	90	—0.05	80	.00	90	.30	145
9,	-----	-----	4.55	3830	1.15	435	1.25	490	.95	340	.00	90	—0.05	80	.00	90	.30	145
10,	-----	-----	3.70	2685	1.10	410	1.05	390	.80	280	.00	90	—0.05	80	.00	90	.30	145
11,	-----	-----	3.30	2210	1.00	365	.80	280	.75	265	.00	90	—0.10	75	+0.10	105	.45	180
12,	-----	-----	2.60	1480	0.90	320	.65	235	.70	250	.00	90	—0.05	80	.20	125	.65	235
13,	-----	-----	2.25	1175	0.80	280	.65	235	.65	235	.00	90	—0.05	80	.20	125	.75	265
14,	-----	-----	2.00	980	0.75	265	.70	250	.55	110	.00	90	.00	90	.20	125	.80	280
15,	-----	-----	2.75	1620	1.40	580	.70	250	.50	195	—0.05	80	.00	90	.20	125	.85	300
16,	-----	-----	4.60	3900	2.15	1095	.70	250	.50	195	—0.05	80	—0.05	80	.20	125	.95	340
17,	-----	-----	5.05	4575	1.70	770	.70	250	.40	170	—0.05	80	—0.05	80	.20	125	1.25	490
18,	-----	-----	4.25	3410	1.25	490	.65	235	.40	170	—0.05	80	—0.05	80	.20	125	2.85	1720
19,	-----	-----	3.50	2445	.95	340	.68	245	.30	145	—0.05	80	—0.05	80	.20	125	4.35	3550
20,	-----	-----	3.95	3005	.80	280	.70	250	.20	125	—0.10	75	—0.02	87	.20	125	3.80	2810
21,	-----	-----	3.95	3005	.75	265	.90	320	.20	125	—0.10	75	.00	90	.20	125	2.60	1480
22,	-----	-----	3.30	2210	.75	265	.90	320	.10	105	0.10	75	.00	90	.20	125	2.10	1055
23,	-----	-----	2.95	1830	1.15	435	.85	300	.10	105	0.10	75	.00	90	.25	135	1.45	610
24,	-----	-----	2.50	1390	1.05	390	.80	280	.10	105	—0.10	75	.00	90	.30	145	1.20	460
25,	-----	-----	2.10	1055	1.65	740	1.10	410	.00	90	—0.10	75	.00	90	.25	135	1.55	670
26,	-----	-----	1.85	870	1.35	550	1.20	460	.00	90	—0.10	75	.00	90	.20	125	1.60	705
27,	-----	-----	5.00	4500	1.05	390	.95	340	.00	90	0.10	75	+0.10	105	.20	125	1.50	640
28,	-----	-----	4.40	3620	.85	300	.80	280	.00	90	0.10	75	.10	105	.20	125	1.50	640
29,	1.85	870	3.20	2095	.80	280	.70	250	.00	90	—0.10	75	.10	105	.20	125	1.55	670
30,	1.90	905	4.05	3135	1.05	390	.70	250	.00	90	—0.05	80	.10	105	.20	125	1.85	870
31,	-----	-----	3.50	2445	-----	-----	.70	250	.00	90	-----	-----	.10	105	-----	-----	3.35	2270

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRENCH CREEK, AT CARLTON, MERCER COUNTY, PENNA.

1909. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.65	2625	1.75	800	4.15	3270	3.85	2875	10.9	19100	1.50	640	1.90	905	.34	155	.45	182	.24	133	.40	170	1.22	472
2,	2.70	1570	1.45	610	3.65	2625	3.45	2385	c11.4	21600	1.45	610	1.55	670	.33	153	.42	175	.38	165	.37	162	1.09	405
3,	2.30	1215	1.45	610	3.90	2940	3.20	2095	9.85	14790	1.40	580	1.35	550	.33	153	.38	165	.88	312	.35	158	.98	356
4,	2.80	1670	1.55	670	4.30	3480	3.25	2150	7.15	8220	1.40	580	1.20	460	.32	150	.37	162	.88	312	.35	158	.89	316
5,	5.25	4880	2.25	1175	3.75	2750	3.20	2095	5.35	5040	3.00	1880	1.15	435	.30	145	.36	160	.58	215	.34	155	.79	277
6,	6.85	7650	4.45	3690	3.50	2445	3.15	2040	4.80	4200	3.75	2750	1.05	385	.30	145	.34	155	.48	190	.34	155	.70	250
7,	6.65	7290	5.55	5365	4.10	3200	3.85	2875	4.05	3135	3.05	1930	1.0	365	.30	145	.32	150	.39	168	.33	152	.70	250
8,	4.70	4050	4.80	4200	4.55	3830	4.00	3070	3.50	2445	2.60	1480	1.0	365	.28	141	.30	145	.34	155	.33	152	.98	356
9,	3.15	2040	3.65	2625	5.00	4500	3.60	2565	3.00	1880	2.00	980	1.0	365	.28	141	.29	142	.29	142	.45	182	1.90	905
10,	2.85	1720	3.85	2875	6.80	7560	3.10	1985	2.85	1720	2.10	1055	1.0	365	.28	141	.28	141	.26	137	.60	220	2.34	1249
11,	2.65	1525	4.00	3070	7.35	8620	2.85	1720	3.80	2810	2.70	1570	.95	340	.28	141	.28	141	.24	133	.76	268	2.34	1249
12,	2.35	1260	3.15	2040	7.05	8025	2.85	1720	4.50	3760	2.85	1720	.90	320	.28	141	.28	141	.27	139	.85	300	2.34	1249
13,	2.05	1020	3.75	2750	5.15	4725	3.30	2210	3.85	2875	2.10	1055	1.05	385	.28	141	.28	141	.28	141	.60	220	2.33	1240
14,	2.20	1135	4.90	4350	4.20	3340	4.55	3830	3.20	2095	1.75	1000	1.20	460	.28	141	.28	141	.28	141	.51	198	2.50	1390
15,	2.80	1670	7.50	8920	3.75	2750	4.85	4275	2.90	1775	1.60	705	1.30	520	.28	141	.28	141	.28	141	.44	180	3.10	1985
16,	3.35	2270	8.05	10020	3.30	2210	4.05	3135	4.45	3690	1.60	705	1.40	580	.29	143	.28	141	.28	141	.41	172	3.65	2625
17,	2.75	1620	7.30	8520	3.00	1880	3.35	2270	4.60	3900	1.50	640	1.45	610	.80	280	.27	139	.28	141	.59	218	3.70	2685
18,	2.35	1260	5.15	4725	2.90	1775	2.95	1830	4.10	3200	1.60	705	1.15	435	1.02	374	.26	137	.28	141	1.24	484	3.15	2040
19,	2.25	1175	4.55	3830	2.80	1670	2.55	1435	3.10	1985	1.50	640	.95	340	.89	316	.24	133	.31	148	1.87	884	3.10	1985
20,	2.05	1020	5.45	5200	3.20	2095	2.25	1175	2.60	1480	1.40	580	.80	280	.58	215	.22	129	.34	155	1.81	842	3.10	1985
21,	2.15	1095	5.75	5705	3.05	1930	2.20	1135	2.30	1215	1.30	520	*.70	250	.40	170	.22	129	.30	145	1.84	863	3.25	2150
22,	3.05	1930	5.15	4725	2.75	1620	3.10	1985	1.95	940	1.25	490	*.60	220	.30	145	.22	129	.33	152	2.90	905	3.20	2095
23,	6.20	6480	5.60	5450	2.50	1390	3.85	2875	1.80	835	1.20	460	*.50	195	.30	145	.22	129	.37	162	3.94	2992	3.05	1930
24,	7.25	8420	7.85	9620	2.20	1135	3.30	2210	1.75	800	4.05	3135	.38	165	.28	141	.23	131	.68	244	4.00	3070	3.00	1880
25,	6.90	7740	8.75	11625	3.90	2940	2.60	1480	1.70	770	4.20	3340	.44	180	.28	141	.28	141	.94	356	3.40	2325	3.00	1880
26,	5.20	4800	a8.95	12125	5.10	4650	2.25	1175	1.70	770	3.35	2270	.44	180	.28	141	.28	141	1.15	435	2.50	1390	3.00	1880
27,	3.90	2940	7.35	8620	5.10	4650	2.05	1020	1.60	705	3.20	2095	.42	175	.34	155	.27	139	1.07	396	1.94	935	3.05	1930
28,	3.25	2150	5.35	5040	5.00	4500	1.95	940	1.70	770	3.80	2810	.40	170	.50	195	.26	137	.94	356	1.58	692	3.30	2210
29,	2.70	1570	------	------	5.05	4575	2.30	1215	1.70	770	3.25	2150	.34	155	.46	185	.25	135	.87	308	1.38	568	3.65	2625
30,	2.35	1260	------	------	4.55	2830	b9.00	12250	1.60	705	2.55	1435	.33	153	.42	175	.24	133	.76	268	1.32	532	3.85	2875
31,	2.05	1020	------	------	4.10	3200	------	------	1.55	670	------	------	.34	155	.44	180	------	------	.56	210	------	------	4.00	3070

a Maximum at 8 A. M.,=9.00 ft.; 12250 sec. ft.
b Maximum at 5 P. M.,= 9.4 ft.; 13400 sec.-ft.
c Maximum at 8 A. M.,=11.60 ft.; 22650 sec.-ft.
* Estimated.
Readings July 1 to 23, inclusive, are unreliable on account of water having receded from gage.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRENCH CREEK, AT CARLTON, MERCER COUNTY, PENNA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEO.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.00	3070	4.18	3310	9.78	14600	1.69	764	2.45	1345	1.45	610	.30	145	.30	145	.20	125	.29	143	3.60	2560	4.15	3270
2,	4.20	3340	4.12	3230	10.86	18900	1.58	692	4.00	3070	2.75	1620	.30	145	.26	137	.20	125	.28	141	4.50	3760	3.95	3000
3,	4.70	4050	4.05	3140	c11.80	23800	1.48	628	5.60	5450	3.95	3000	.30	145	.22	129	.20	125	.26	137	5.63	5500	3.80	2810
4,	5.28	4930	4.30	3480	11.90	24400	1.40	580	6.80	7560	4.50	3760	.30	145	.21	127	.65	235	.24	133	5.40	5120	3.78	2780
5,	5.35	5040	4.38	3590	11.35	21400	2.20	1130	6.30	6660	3.58	2540	.30	145	.20	125	.78	274	.22	129	3.65	2620	3.66	2640
6,	5.42	5150	4.24	3400	11.05	19800	2.20	1130	4.60	3900	2.85	1720	.30	145	.20	125	.92	329	.38	165	3.05	1930	3.46	2400
7,	5.85	5860	4.12	3230	11.00	19600	2.08	1040	3.55	2500	2.50	1390	.38	165	.20	125	1.70	770	1.25	490	2.40	1300	3.25	2150
8,	6.00	3130	2.95	1830	9.80	14600	2.02	995	2.90	1780	2.40	1300	.38	165	.20	125	1.85	870	1.95	942	2.40	1300	3.35	2270
9,	6.00	3130	2.78	1650	8.50	11000	1.98	965	2.75	1620	2.19	1130	.29	143	.20	125	1.35	550	1.55	673	2.20	1130	2.90	1780
10,	5.92	5990	2.72	1500	7.30	8520	1.82	849	2.44	1340	1.92	920	.25	135	.20	125	1.05	388	1.25	490	3.45	2380	2.55	1340
11,	5.52	5310	2.68	1550	6.20	6480	1.68	757	2.05	1020	1.78	820	.25	135	.30	145	.88	312	.85	300	6.25	6570	2.20	1130
12,	5.20	4800	2.82	1690	4.95	4420	1.58	692	1.86	877	1.80	835	.25	135	.50	195	.76	268	.68	244	7.55	9020	2.00	980
13.	4.92	4380	3.55	2500	4.70	4050	1.45	610	1.72	783	2.24	1170	.42	175	.42	175	.62	226	.52	200	7.90	9720	2.00	980
14,	4.45	3690	3.05	1930	4.36	3560	1.28	508	1.55	672	1.90	905	.70	250	.32	150	.47	188	.38	165	6.20	6480	2.00	980
15,	4.10	3200	2.60	1480	3.95	3000	1.18	435	1.37	562	1.65	735	.70	250	.28	141	.38	165	.34	155	5.40	5120	2.00	980
16,	4.10	3200	2.75	1620	3.80	2810	1.10	410	1.29	514	1.35	550	.68	244	.20	125	.31	148	.30	145	4.75	4120	2.00	980
17,	5.05	4580	4.70	4050	3.80	2810	1.18	435	1.26	496	1.12	420	.55	208	.20	125	.30	145	.30	145	4.35	3550	2.00	980
18,	8 95	12100	5.40	5120	3.74	2740	1.22	472	1.22	472	.96	347	.42	175	.20	125	.30	145	.28	141	4.16	3280	2.15	1100
19,	7.95	9820	5.30	4960	3.64	2610	1.32	532	1.19	455	.88	312	.34	155	.20	125	.30	145	.27	139	3.96	3020	2.34	1250
20,	9.52	13800	4.95	4420	4.01	3080	1.65	738	1.14	430	.80	280	.26	137	.20	125	.28	141	.27	139	3.80	2810	2.44	1340
21,	a8.94	12100	4.55	3830	5.08	4620	1.95	942	1.08	401	.78	274	.25	135	.20	125	.26	137	.27	137	3.68	2660	2.57	1450
22,	7.40	8720	4.50	3760	5.28	4930	2.05	1020	1.14	430	.76	271	.25	135	.20	125	.24	133	.27	137	3.64	2610	2.76	1630
23,	6.10	6300	4.55	3830	4.65	3980	2.02	995	1.24	484	.66	238	.24	133	.20	125	.22	129	.35	158	3.52	2470	2.95	1830
24,	6.10	6300	4.42	3650	4.14	3260	1.85	870	1.85	870	.45	182	.22	129	.20	125	.22	129	.55	208	4.50	3760	3.40	2320
25,	5.02	4530	4.31	3490	3.78	2780	3.85	2880	1.56	679	.30	145	.22	129	.20	125	.36	160	.99	360	6.65	7290	3.89	2930
26,	4.72	4080	3.95	3000	3.42	2350	5.40	5120	1.45	610	.30	145	.36	152	.20	125	.47	188	1.60	705	7.00	7930	4.15	3270
27,	4.60	3900	4.20	3340	3.00	1880	4.80	4200	1.36	556	.30	145	.31	148	.20	125	.44	180	2.20	1130	6.60	7200	3.92	2970
28,	4.60	3900	b7.98	9880	2.62	1500	4.00	3070	1.18	435	.30	145	.28	141	.20	125	.36	160	2.05	1020	5.55	5360	3.95	3000
29,	4.64	3960	------	------	2.20	1140	3.18	2070	1.10	410	.30	145	.25	135	.20	125	.30	145	2.65	1520	5.15	4720	5.65	5540
30,	4.51	3770	------	------	1.96	950	2.68	1550	1.10	410	.30	145	.30	145	.20	125	.30	145	3.30	2210	4.55	3830	6.95	7840
31,	4.20	3340	------	------	1.80	835	------	------	1.10	410	------	------	.34	155	.20	125	------	------	3.34	2250	------	------	7.15	8220

a Maximum, +11.50=22100 sec. ft.
b Maximum, = 8.55=11100 sec. ft.
c Maximum, =12.00=25000 sec. ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF FRENCH CREEK, AT CARLTON, MERCER COUNTY, PENNA

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	7.00	7930	5.20	4800	3.05	1930	3.95	3000	2.00	980	.50	195	.66	268	.30	145	3.30	2210	5.05	4580	3.05	1930	5.15	4720
2,	7.15	8220	4.30	3480	2.90	1780	3.65	2620	3.80	2810	.50	195	.55	208	.30	145	2.48	1370	6.45	6930	3.22	2120	4.40	3620
3,	8.45	10900	3.68	2660	2.75	1620	3.30	2210	3.65	2620	.50	195	.50	195	.30	145	1.71	776	5.90	5960	3.05	1930	3.45	2380
4,	8.05	10000	3.55	2500	2.40	1300	3.15	2040	3.10	1980	.50	195	.50	195	.30	145	1.30	520	5.00	4500	2.88	1750	3.00	1880
5,	7.40	8720	3.35	2270	2.05	1020	5.25	4880	2.62	1500	.55	208	.50	195	.30	145	.95	342	4.65	3980	2.78	1650	3.00	1880
6,	5.90	5960	3.20	2100	2.00	980	6.05	6220	2.30	1210	.75	265	.50	195	.30	145	1.40	580	4.45	3690	2.80	1670	3.00	1880
7,	4.85	4280	2.95	1830	2.00	980	6.20	6480	1.92	920	.80	280	.50	195	.40	170	2.26	1190	4.70	4050	3.80	2810	3.00	1880
8,	4.15	3270	2.75	1620	2.00	980	5.55	5360	1.65	738	.80	280	.50	195	.38	165	2.30	1210	4.60	3900	4.65	3980	3.00	1880
9,	4.05	3130	2.46	1350	2.00	980	4.40	3620	1.45	610	.72	256	.50	195	.34	155	2.20	1140	4.05	3140	4.70	4050	3.10	1980
10,	3.85	2880	2.28	1200	2.90	1780	3.95	3000	1.32	532	.62	226	.50	195	.32	150	2.16	1100	3.35	2270	3.98	3040	4.50	3760
11,	3.75	2750	2.20	1130	4.35	3550	3.60	2565	1.30	520	.52	200	.48	190	.30	145	1.65	738	2.97	1850	3.45	2380	4.80	4200
12,	6.70	7380	2.12	1070	4.10	3200	3.25	2150	1.30	520	.75	265	.45	182	.28	141	1.30	520	2.79	1660	3.40	2320	5.50	5280
13,	8.00	9920	2.05	1020	4.40	3620	2.90	1780	1.30	520	1.25	490	.41	172	.26	137	1.05	388	2.68	1550	4.50	3760	7.20	8320
14,	9.85	14800	2.40	1300	4.20	3340	2.85	1720	1.24	484	1.56	680	.38	165	.25	135	.88	312	2.35	1260	4.46	3700	7.60	9120
15,	10.45	17100	6.05	6220	3.95	3000	2.95	1830	1.18	450	1.15	435	.37	164	.26	137	6.83	7610	2.15	1100	4.28	3450	7.70	9320
16,	9.65	14200	6.35	6750	3.75	2750	2.85	1720	1.08	401	.90	320	.34	155	.36	160	7.00	7930	1.95	940	4.15	3270	7.05	8020
17,	7.80	9520	6.25	6570	2.50	1390	2.75	1620	1.00	365	.68	244	.32	150	1.00	365	6.50	7020	1.90	905	4.10	3200	6.25	6570
18,	5.60	5450	7.50	8920	2.70	1570	2.58	1460	1.00	365	.56	210	.31	148	1.00	365	4.60	3900	6.30	6660	6.55	7110	5.55	5360
19,	4.25	3410	8.05	10000	3.05	1930	2.50	1390	1.00	365	.51	198	.30	145	.85	300	3.60	2565	6.50	7020	7.00	9120	4.40	3620
20,	3.68	2660	7.80	9520	3.20	2100	3.70	2680	1.00	365	.50	195	.30	145	.75	265	2.94	1820	5.68	5590	7.80	9520	3.70	2685
21,	3.50	2440	6.00	6130	3.75	2750	4.95	4420	1.00	365	.50	195	.30	145	.55	208	2.64	1520	4.45	3690	6.20	6480	3.45	2380
22,	3.45	2380	4.20	3340	4.00	3070	4.10	3200	.99	360	.50	195	.30	145	.36	160	2.33	1240	3.71	2700	4.85	4280	3.30	2210
23,	3.25	2150	3.55	2500	4.25	3410	3.70	2680	.94	338	.50	195	.30	145	.25	135	2.02	995	3.36	2280	4.35	3550	4.80	4200
24,	3.00	1880	3.35	2270	4.10	3200	3.30	2210	.88	312	.50	195	.30	145	.25	135	1.82	849	3.25	2150	5.15	4720	5.25	4880
25,	2.65	1520	3.15	2040	3.45	2380	2.85	1720	.79	277	.50	195	.30	145	.34	155	1.60	705	3.05	1930	5.30	4960	4.55	3830
26,	2.50	1390	3.30	2210	3.15	2040	2.65	1520	.70	250	.50	195	.30	145	.44	180	1.25	490	2.74	1610	4.90	4350	3.85	2880
27,	3.30	2210	3.85	2880	3.75	2750	2.35	1260	.62	226	.68	244	.30	145	.70	250	1.40	580	2.50	1390	4.30	3480	4.30	3480
28,	8.20	10300	3.95	3000	4.85	4280	1.95	940	.57	212	1.60	705	.30	145	1.70	770	1.90	905	2.38	1290	4.15	3270	4.60	3900
29,	9.85	14800	------	------	4.80	4200	1.80	835	.54	205	1.85	870	.30	145	5.20	4800	3.80	2810	2.26	1180	5.75	5700	3.80	2810
30,	9.90	15000	------	------	4.15	3270	1.92	920	.50	195	1.30	520	.30	145	6.13	6350	6.20	6480	2.20	1140	6.25	6570	3.70	2680
31,	7.20	8320	------	------	4.20	3340	------	------	.50	195	------	------	.30	145	4.80	4200	------	------	2.35	1260	------	------	4.50	3760

ESTIMATED MONTHLY DISCHARGE OF FRENCH CREEK AT CARLTON, MERCER COUNTY.

(Drainage area 1070 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1908.					
May,	5535	870	2774	2.593	2.990
June,	2745	265	662	.619	.691
July,	800	235	395	.369	.426
August,	435	90	181	.169	.195
September,	90	75	83	.078	.087
October,	105	75	87	.081	.093
November,	145	90	114	.107	.120
December,	3550	125	696	.651	.750
1909.					
January,	8420	1020	2841	2.655	3.061
February,	12250	610	4963	4.638	4.830
March,	8620	1135	3488	3.260	3.758
April,	13400	940	2467	2.306	2.573
May,	22650	670	3827	3.577	4.124
June,	3340	460	1350	1.262	1.408
July,	905	153	359	.336	.387
August,	374	141	170	.159	.183
September,	182	129	144	.135	.150
October,	435	133	206	.193	.223
November,	3070	152	657	.614	.685
December,	3070	250	1542	1.441	1.661
The year,	22650	129	1834	1.715	23.043
1910.					
January,	22100	3070	5467	5.109	5.890
February,	9880	1480	3305	3.089	3.217
March,	25000	835	7755	7.248	8.356
April,	5120	410	1236	1.155	1.288
May,	7560	410	1523	1.423	1.641
June,	3760	145	873	.816	.910
July,	250	129	157	.147	.170
August,	195	125	132	.123	.142
September,	870	125	239	.223	.249
October,	2250	129	486	.454	.523
November,	9720	1130	4304	4.022	4.487
December,	8220	980	2456	2.295	2.646
The year,	25000	125	2328	2.175	29.519
1911.					
January,	17100	1390	6931	6.478	7.469
February,	10000	1020	3596	3.361	3.500
March,	4280	980	2403	2.246	2.589
April,	6480	835	2602	2.432	2.713
May,	2810	195	684	.639	.737
June,	870	195	301	.281	.313
July,	268	145	169	.158	.182
August,	6350	135	678	.634	.731
September,	7930	342	1994	1.864	2.079
October,	7020	905	2973	2.779	3.204
November,	9500	1650	4004	3.742	4.175
December,	9320	1880	4044	3.779	4.357
The year,	17100	135	2532	2.366	32.049

SUGAR CREEK.

DESCRIPTION OF BASIN.

Sugar creek, one of the largest tributaries of French creek, rises in two branches in the southeast corner of Crawford county, Penn'a, and flows in a general southerly direction, with numerous large tributaries from the east and west, draining approximately 173 square miles, to its mouth at Sugar Creek station, Venango county, Penn'a., a distance of approximately twenty miles. It flows through a well populated, agricultural region, the side hills being low and rolling and the valleys being wide and flat. There are numerous small villages in the watershed, the largest of which is Cooperstown borough. The production of oil is extensive throughout the valley.

The mean annual precipitation over this watershed is from 40 to 45 inches.

The discharge of this stream has been measured since May 6th., 10, at Wyattville, about three miles above the mouth.

OHIO BASIN—STATION NO. 9.

SUGAR CREEK AT WYATTVILLE, PA.

DESCRIPTION OF STATION.

This station was established by the Flood Commission of Pittsburg, on May 6th, 1910, and is located on the steel highway bridge at Wyattville, Venango county, three miles above the mouth of the creek.

The channel is straight for a distance of about 600 feet above and 1,500 feet below the station. At low water a pool is formed, owing to the flat slope of the creek bottom, which is gravelly and permanent. The right bank is high and does not overflow, while the left bank overflows only at extreme high water.

Discharge measurements are taken from the downstream side of the bridge, at ordinary stages, and by wading at a section ¼ mile below the bridge, at low stages. The initial point for soundings is the face of left abutment.

A chain gage is attached to the bridge, the length of chain from the bottom of the weight to the marker being 13.58 feet. The elevation of zero is 1050.96 feet. B. M. No. 1 is on top of left abutment, downstream side of bridge; elevation 1062.48 feet, or 11.52 feet above zero of gage. The gage is read once daily by T. G. Wyatt.

Since the establishment of this station eight discharge measurements have been made.

The following data have been furnished by the Flood Commission of Pittsburg.

DISCHARGE MEASUREMENTS OF SUGAR CREEK AT WYATTVILLE, VENANGO COUNTY, PENNA.

(Drainage area 160 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.	
	1910,							
1	May 6,	Drake,	92	363	0.52	2.30	177	Wading msm't.
2	June 12,	do	92	357	0.32	2.12	119	Wading msm't
3	Aug. 11,	do	32	22	1.18	1.50	26	Wading msm't.
4	Nov. 3,	do	92	390	0.70	2.51	273	
5	Nov. 16,	do	92	411	0.87	2.67	357	
	1911,							
6	Jan. 2,	do	92	532	2.56	4.16	1360	
7	June 22,	do	30	18	1.06	1.32	19	Wading msm't.
	1912,							
8	July 30,	Boehringer,	46	39	0.97	1.62	38	Wading msm't.

DISCHARGE TABLE FOR SUGAR CREEK AT WYATTVILLE, VENANGO COUNTY, FROM MAY 7, 1910.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.00	10	.10	115	.10	619	.10	1315	.10	2180
.10	11	.20	142	.20	683	.20	1395	.20	2270
.20	13	.30	177	.30	748	.30	1475	.30	2360
.30	16	.40	220	.40	813	.40	1555	.40	2450
.40	21	.50	268	.50	880	.50	1640	.50	2540
.50	28	.60	320	.60	950	.60	1730	.60	2630
.60	37	.70	375	.70	1020	.70	1820	.70	2720
.70	47	.80	432	.80	1090	.80	1910	.80	2810
.80	59	.90	491	.90	1165	.90	2000	.90	2900
.90	75	3.00	555	4.00	1240	5.00	2090	6.00	2990
2.00	94								

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUGAR CREEK, AT WYATTVILLE, VENANGO COUNTY, PENNA.

1910.	MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G I	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	1.8	59	1.5	28	1.	28	1.5	28	1.5	28	2.3	177	2.8	432
2,	------	------	1.9	75	1.5	28	1.	28	1.6	37	1.5	28	2.3	177	2.7	375
3,	------	------	3.0	555	1.5	28	1.	28	1.6	37	1.5	28	2.6	320	2.7	375
4,	------	------	2.6	320	1.5	28	1.	28	1.7	47	1.5	28	2.4	220	2.6	320
5,	------	------	2.4	220	1.5	28	1.5	23	1.6	37	1.6	37	2.4	220	2.6	320
6,	------	------	2.1	115	1.5	28	1.	28	1.6	37	1.9	75	2.3	177	2.5	268
7,	2.1	115	1.9	75	1.8	59	1.	28	1.6	37	2.2	142	2.2	142	2.4	220
8,	2.0	94	1.9	75	1.7	47	1.	28	1.5	28	2.1	115	2.1	115	2.3	177
9,	2.0	94	1.9	75	1.7	47	1.5	28	1.5	28	2.0	94	2.1	115	2.2	142
10,	1.9	75	1.8	59	**1.6**	**37**	**1.6**	**37**	1.5	28	1.9	75	2.1	115	2.3	177
11,	1.8	59	1.9	75	1.6	37	1.5	28	1.6	37	1.9	75	2.8	432	2.3	177
12,	1.8	59	2.1	115	1.6	37	1.5	28	1.6	37	1.8	59	2.8	432	2.4	220
13,	1.7	47	2.0	94	1.7	47	1.5	28	1.6	37	1.7	47	2.7	375	2.5	268
14,	1.7	47	1.9	75	1.7	47	1.5	28	1.6	37	1.6	37	2.7	375	2.5	268
15,	1.7	47	1.8	59	1.7	47	1.5	28	1.6	37	1.6	37	2.7	375	2.4	220
16,	1.6	37	1.9	75	1.6	37	1.5	28	1.6	37	1.8	59	2.6	320	2.3	177
17,	1.6	37	1.8	59	1.9	75	1.5	28	1.5	28	1.8	59	2.6	320	2.3	177
18,	1.8	59	1.8	59	1.7	47	1.5	28	1.5	28	1.8	59	2.6	320	2.4	220
19,	1.8	59	1.7	47	1.6	37	1.5	28	1.5	28	1.8	59	2.6	320	2.5	268
20,	1.7	47	1.7	47	1.6	37	1.5	28	1.5	28	1.7	47	2.5	268	2.5	268
21,	1.7	47	1.7	47	1.6	37	1.4	21	1.4	21	1.7	47	2.6	320	2.4	220
22,	1.7	47	1.6	37	1.6	37	1.4	21	1.4	21	2.0	94	2.6	320	2.3	177
23,	1.7	47	1.6	37	1.7	47	1.4	21	1.4	21	1.9	75	2.8	432	2.4	220
24,	1.7	47	1.6	37	1.6	37	1.4	21	1.6	37	1.9	75	3.4	813	3.3	748
25,	1.8	59	1.6	37	1.6	37	1.4	21	1.9	75	1.8	59	3.9	1165	2.5	268
26,	1.7	47	1.6	37	**1.6**	**37**	**1.5**	**28**	1.7	47	2.1	115	3.7	1020	2.7	375
27,	1.7	47	1.5	28	1.6	37	1.6	37	1.7	47	2.0	94	3.2	683	2.6	320
28,	1.6	37	1.5	28	1.6	37	1.6	37	1.6	37	2.1	115	2.9	491	2.8	432
29,	1.6	37	1.5	28	1.5	28	1.6	**37**	1.6		2.1	115	3.0	555	3.9	1165
30,	1.7	47	1.5	28	1.7	47	1.5	28	1.5	28	2.1	115	2.9	491	4.7	1820
31,	1.8	59	------	------	1.6	37	1.5	28	------	------	2.2	142	------	------	3.5	880

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SUGAR CREEK, AT WYATTVILLE, VENANGO COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.4	813	2.4	220	2.1	115	2.4	220	2.2	142	1.5	28	1.4	21	1.2	13	1.8	59	2.4	220	2.7	375	2.3	177
2,	4.0	1240	2.4	220	2.1	115	2.3	177	2.4	220	1.5	28	1.4	21	1.2	13	1.7	47	3.4	813	2.4	220	2.3	177
3,	4.5	1640	2.2	142	2.0	94	2.3	177	2.2	142	1.4	21	1.3	16	1.3	16	1.7	47	3.2	683	2.1	115	2.2	142
4,	3.5	880	2.2	142	2.0	94	2.2	142	2.0	94	1.4	21	1.3	16	1.3	16	1.6	37	2.8	432	2.0	94	2.2	142
5,	3.1	619	2.1	115	1.9	75	3.8	1090	1.9	75	1.5	28	1.3	16	1.2	13	1.5	28	2.3	177	2.1	115	2.1	115
6,	3.1	619	2.1	115	1.9	75	3.5	880	1.8	59	1.5	28	1.3	16	1.2	13	1.5	28	2.1	115	2.1	115	2.2	142
7,	2.9	491	2.1	115	1.8	59	3.0	555	1.8	59	1.5	28	1.3	16	1.2	13	1.4	21	2.0	94	2.7	375	2.2	142
8,	2.7	375	2.1	115	1.8	59	2.8	432	1.8	59	1.4	21	1.3	16	1.2	13	1.4	21	2.5	268	2.5	268	2.3	177
9,	2.7	375	2.0	94	2.1	115	2.6	320	1.7	47	1.4	21	1.3	16	1.2	13	2.8	432	2.4	220	2.3	177	2.3	177
10,	2.7	375	2.0	94	2.3	177	2.4	220	1.7	47	1.4	21	1.3	16	1.2	13	2.1	115	2.4	220	2.1	115	2.2	142
11,	2.6	320	2.0	94	2.3	177	2.3	177	1.7	47	1.4	21	1.3	16	1.2	13	2.1	115	2.1	115	2.1	115	2.2	142
12,	3.2	683	1.9	75	2.3	177	2.3	177	1.7	47	1.5	28	1.4	21	1.2	13	2.0	94	1.5	28	2.0	94	3.4	813
13,	4.2	1395	1.9	75	2.4	220	2.2	142	1.7	47	1.7	47	1.3	16	1.2	13	1.9	75	1.8	59	2.5	268	3.9	1165
14,	4.5	1640	2.4	220	2.4	220	2.2	142	1.6	37	1.6	37	1.3	16	1.2	13	1.8	59	2.1	115	2.7	375	3.0	555
15,	5.0	2090	3.2	683	2.3	177	2.4	220	1.6	37	1.5	28	1.3	16	1.4	21	a6.1	3080	1.5	28	2.6	320	3.6	950
16,	3.3	748	3.0	555	2.1	115	2.2	142	1.6	37	1.4	21	1.3	16	1.5	28	4.8	1910	1.8	59	2.4	220	3.4	813
17,	2.9	491	2.9	491	2.0	94	2.3	177	1.5	28	1.4	21	1.3	16	1.6	37	4.2	1395	1.7	47	2.1	115	3.1	619
18,	2.4	220	3.5	880	2.0	94	2.2	142	1.5	28	1.4	21	1.3	16	1.5	28	3.5	880	3.1	619	3.6	950	3.0	555
19,	2.3	177	3.0	555	2.1	115	2.0	94	1.6	37	1.3	16	1.3	16	1.5	28	3.0	555	2.8	432	3.3	748	2.7	375
20,	2.2	142	2.8	432	2.2	142	3.2	683	1.8	59	1.1	11	1.3	16	1.4	21	2.4	220	2.5	268	3.0	555	2.5	268
21,	2.2	142	2.6	320	2.2	142	2.6	320	1.7	47	1.0	10	1.3	16	1.3	16	2.0	94	2.5	268	2.4	220	2.4	220
22,	2.1	115	2.5	268	2.3	177	2.4	220	1.6	37	0.9	9	1.2	13	1.3	16	1.9	75	2.4	220	2.1	115	2.4	220
23,	2.1	115	2.3	177	2.4	220	2.6	320	1.6	37	1.3	16	1.2	13	1.2	13	1.8	59	2.2	142	2.0	94	3.9	1165
24,	2.0	94	2.2	142	2.1	115	2.6	320	1.5	28	1.3	16	1.2	13	1.4	21	1.8	59	2.8	432	3.0	555	3.7	1020
25,	1.9	75	2.2	142	2.1	115	2.5	268	1.5	28	1.3	16	1.2	13	1.6	37	1.7	47	1.7	47	2.8	432	3.4	813
26,	1.9	75	2.3	177	2.3	177	2.2	142	1.5	28	1.5	28	1.3	16	1.5	28	1.6	37	1.8	59	2.7	375	3.0	555
27,	2.0	94	2.5	268	2.7	375	2.0	94	1.5	28	1.7	47	1.3	16	1.4	21	1.6	37	1.8	59	2.9	491	2.7	375
28,	4.6	1730	2.4	220	2.6	320	2.0	94	1.4	21	1.6	37	1.2	13	3.8	1090	1.8	59	1.9	75	3.0	555	2.9	491
29,	4.1	1315			2.5	268	2.0	94	1.4	21	1.5	28	1.2	13	2.9	491	2.6	320	1.8	59	2.6	320	2.4	220
30,	3.3	748			2.5	268	2.2	142	1.4	21	1.4	21	1.2	13	2.4	220	2.5	268	1.8	59	2.4	220	2.3	177
31,	2.9	491			2.4	220			1.4	21			1.2	13	2.0	94			2.0	94			2.3	177

a Max. 6.6 at Noon=3530 sec.-ft.

ESTIMATED MONTHLY DISCHARGE OF SUGAR CREEK AT WYATTVILLE, VENANGO COUNTY.

(Drainage area 160 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1910.					
June,	555	28	89	0.556	0.621
July,	75	28	39	.244	.281
August,	37	21	28	.175	.202
September,	75	21	35	.219	.244
October,	142	28	72	.450	.519
November,	1165	115	387	.242	.270
December,	1820	142	377	2.356	2.716
1911.					
January,	2090	75	656	4.100	4.727
February,	880	75	255	1.594	1.660
March,	375	59	158	.988	1.139
April,	1090	94	277	1.731	1.931
May,	220	21	54	.338	.390
June,	47	9	24	.150	.167
July,	21	13	16	.100	.115
August,	1090	13	77	.481	.554
September,	3530	21	342	2.138	2.386
October,	813	28	211	1.319	1.521
November,	950	94	304	1.900	2.120
December,	1165	115	426	2.662	3.069
The year,	3530	9	233	1.458	19.779

Clarion River below Gaging Station.

CLARION RIVER.

DESCRIPTION OF BASIN.

The Clarion river, one of the largest tributaries of the Allegheny river, draining an area of approximately 1,232 square miles, rises in several branches in the southern part of McKean county. The upper branches flow in a general southerly direction to Johnsonburg, Elk county, where they unite to form the Clarion river proper. From this point the river flows in a general southwesterly direction, in a very tortuous course, to its mouth, at Foxburg, a distance of approximately ninety-five miles. The elevation of the main stream at Johnsonburg is 1,442 feet, while at its mouth it is 846 feet, giving an average slope of six and one-half feet per mile. From Johnsonburg the river flows through a fairly broad valley until it passes Ridgway, Elk county, where it enters a deep and narrow valley, with high sides, which gradually increase in height as the gorge narrows, so that when the river reaches Clarion county it flows in a narrow bed, with very high precipitous sides, often reaching an altitude of 400 feet above the stream. The hillsides below Ridgway have been practically deforested of their virgin timber and are now covered with a heavy second growth.

The upper portion of the main valley is more thickly inhabited and more largely devoted to agriculture than is the lower section, in which portion the main valley is very sparsely inhabited and largely forest covered, while the plateau land, on either side, is quite generally under cultivation. In the upper portions of the watersheds of the tributaries much of the timber has been destroyed by forest fires and removed by pulp and paper companies. In the upper portion of the watershed are numerous small bituminous coal operations, while in the lower part of the main valley gas wells, in considerable quantities are operated. In Elk county the tributaries are used quite considerably for domestic and industrial water supply, while in Clarion county, with the exception of the borough of Clarion, the stream is little used. In Elk county the stream is badly polluted by tanneries, paper mills and chemical works. The main tributaries are the West Branch, Elk, Little Toby, in Elk county, and Licking, Deer, Piney, Toby and Big Mill creeks, in Clarion county.

The mean annual precipitation over this watershed is from 40 to 45 inches.

The discharge has been measured since March, 1908, at Clarion, about thirty miles above the mouth.

OHIO BASIN—STATION NO. 10.

CLARION RIVER AT CLARION, PA.

DESCRIPTION OF STATION.

This station was established by the U. S. Weather Bureau, on November 17th, 1884, and is located on the single span, steel, through-truss, highway bridge, about one mile above Clarion, Pa. The gage is maintained and operated by the Weather Bureau, the Water Supply Commission taking the discharge measurements for the rating of the station.

The channel is straight for 800 feet above and 1,200 feet below the station. The banks on either side of the river are high and do not overflow. The bed of the river is permanent, being composed of rock, gravel and boulders. The current is swift.

On November 22nd, 1909, a Mott gage was installed to replace a staff gage. The staff gage, above seven feet, was on an oak plank, while below this point the graduations were painted on a sloping rock. The gage was located near the right abutment and could not be read during extreme low stages. The Mott gage is fastened to the downstream hand-rail on the bridge and is placed on the same datum as the original staff gage. The elevation of zero of the gage is 1052 feet. Bench mark No. 1 is top line of right abutment; elevation 1080.48 feet. The gage is read once daily by J. A. Miller.

On account of the unreliability of the low water readings up to November 22nd, 1909, the Water Supply Commission only publishes the data since that date.

Since the establishment of this station eighteen discharge measurements have been made.

DISCHARGE MEASUREMENTS OF CLARION RIVER AT CLARION, CLARION COUNTY, PENNA.

(Drainage area 910 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean Velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1908.							
1	Mar. 20,	Grant,	198	2036	6.53	8.44	13,593	Surface measurem't.
2	May 15,	Grant,	149	937	2.64	3.01	2,480	0.6 depth.
3	Aug. 24,	Bolster,	130	391	0.39	−0.17	154	0.2 & 0.8 depths.
4	Sept. 26,	Ryder,	------	-------	------	−0.41	120	----------------------
	1909.							
5	Feb. 25,	Stevenson,	198	1867	6.34	7.14	11,839	Surface measurem't.
6	May 2,	Ryder,	196	1952	7.59	8.52	15,150	do
7	May 2,	Ryder,	196	1897	7.30	8.19	14,160	do
8	May 3,	Ryder,	196	1619	6.15	6.74	9,964	do
9	May 3,	Ryder,	196	1569	5.83	6.49	9,149	do
10	May 3,	Ryder,	195	1533	5.64	6.27	8,647	do
11	May 4,	Ryder,	194	1412	5.43	5.82	7,671	do
12	May 5,	Ryder,	177	1272	4.67	4.99	5,843	do
13	May 5,	Ryder,	177	1235	4.35	4.79	5,380	Surface & 0.6 depths.
14	May 6,	Ryder,	176	1180	3.99	4.49	4,710	do
	1910.							
15	May 27,	Drake,	------	782	1.37	2.00	1,077	----------------------
16	June 17,	Drake,	------	650	1.23	1.12	801	----------------------
	1911.							
17	Oct. 24,	Ryder,	143	787	1.87	2.06	1,470	----------------------
	1912.							
18	July 28,	Boehringer,	140	611	0.92	1.09	551	0.6 msmt.

Note—All gage heights previous to Nov. 1909, corrected to Mott gage, or +.09 difference.

DISCHARGE TABLE FOR CLARION RIVER AT CLARION, CLARION COUNTY, FROM MARCH 20, 1908, TO DEC. 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
-1.00	----------	.30	860	.50	3095	.70	7330	.90	13350
—.90	----------	.40	925	.60	3240	.80	7560	8.00	13660
—.80	----------	.50	995	.70	3390	.90	7790	.10	13980
—.70	----------	.60	1065	.80	3550	6.00	8020	.20	14300
—.60	100	.70	1135	.90	3710	.10	8260	.30	14620
—.50	110	.80	1210	4.00	3880	.20	8500	.40	14945
—.40	120	.90	1290	.10	4050	.30	8750	.50	15270
—.30	135	2.00	1370	.20	4220	.40	9000	.60	15595
—.20	155	.10	1460	.30	4400	.50	[illegible]	.70	15920
—.10	180	.20	1550	.40	4600	.60	9530	.80	16250
0.00	215	.30	1640	.50	4800	.70	9800	.90	16580
.10	250	.40	1740	.60	5000	.80	10080	9.00	16920
.20	285	.50	1840	.70	5200	.90	10370	.10	17260
.30	325	.60	1950	.80	5400	7.00	10660	.20	17600
.40	370	.70	2060	.90	5600	.10	10950	.30	17950
.50	420	.80	2180	5.00	5800	.20	11240	.40	18300
.60	470	.90	2300	.10	6010	.30	11530	.50	18660
.70	520	3.00	2425	.20	6220	.40	11820	.60	19020
.80	570	.10	2550	.30	6440	.50	12120	.70	19380
.90	620	.20	2680	.40	6660	.60	12420	.80	19770
1.00	675	.30	2810	.50	6880	.70	12730	.90	20120
.10	735	.40	2950	.60	7100	.80	13040	10.00	20500
.20	795								

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CLARION RIVER, AT CLARION, CLARION COUNTY, PENNA.

1909. Day.	NOV.		DEC.	
	G H	Dis.	G H	Dis.
1,	------	------	—.60	100
2,	------	------	—.60	100
3,	------	------	—.60	100
4,	------	------	—.60	100
5,	------	------	—.60	100
6,	------	------	—.60	100
7,	------	------	—.60	100
8,	------	------	—.60	100
9,	------	------	—.60	100
10,	------	------	—.60	100
11,	------	------	—.60	100
12,	------	------	—.60	100
13,	------	------	—.60	100
14,	------	------	—.40	120
15,	------	------	—.40	120
16,	------	------	—.40	120
17,	------	------	—.40	120
18,	------	------	—.40	120
19,	------	------	—.40	120
20,	------	------	—.40	120
21,	------	------	—.40	120
22,	—0.60	100	—.40	120
23,	—0.60	100	—.40	120
24,	—0.60	100	—.40	120
25,	—0.40	120	—.40	120
26,	—0.40	120	—.40	120
27,	—0.50	110	—.40	120
28,	—0.60	100	—.40	120
29,	—0.60	100	—.40	120
30,	—0.60	100	—.40	120
31,	------	------	—.40	120

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CLARION RIVER, AT CLARION, CLARION COUNTY, PENNA.

Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	—0.4	120	2.0	1370	10.8	23600	2.0	1370	3.0	2425	1.9	1290	0.3	325	0.1	250	—0.6	100	0.6	470	—0.4	120	2.6	1950
2,	—0.4	120	2.0	1370	9.6	19020	2.0	1370	2.5	1840	2.0	1370	0.3	325	0.1	250	—0.6	100	0.4	370	—0.4	120	2.2	1550
3,	—0.4	120	2.0	1370	10.0	20500	2.0	1370	2.4	1740	1.9	1290	0.3	325	0.0	215	—0.4	120	0.4	370	—0.5	110	2.0	1370
4,	—0.4	120	2.0	1370	8.6	15595	2.0	1370	2.5	1840	2.8	2180	0.3	325	0.0	215	—0.4	120	0.3	325	—0.6	100	2.0	1370
5,	—0.4	120	1.9	1290	7.6	12420	2.6	1950	2.5	1840	2.6	1950	0.3	325	0.0	215	—0.0	215	0.3	325	—0.6	100	2.0	1370
6,	—0.3	135	1.6	1065	7.3	11530	2.7	2060	2.5	1840	2.0	1370	0.3	325	0.0	215	0.0	215	0.4	370	—0.6	100	1.9	1290
7,	—0.3	135	1.4	925	7.0	10660	2.8	2180	2.4	1740	2.0	1370	0.3	325	—0.2	155	0.1	250	0.0	215	—0.6	100	1.6	1065
8,	—0.3	135	1.4	925	8.0	13660	2.4	1740	2.4	1740	1.9	1290	0.3	325	—0.2	155	0.1	250	—0.4	120	—0.4	120	1.4	925
9,	—0.3	135	1.2	795	6.0	8020	2.2	1550	2.3	1640	1.7	1135	0.3	325	—0.3	135	0.1	250	—0.6	100	—0.4	120	1.2	795
10,	—0.3	135	1.1	735	6.2	8500	2.0	1370	2.4	1740	1.7	1135	0.3	325	—0.3	135	0.1	250	0.2	285	—0.4	120	1.2	795
11,	—0.3	135	1.0	675	5.0	5800	2.0	1370	2.3	1640	1.4	925	0.3	325	—0.3	135	0.1	250	0.0	215	0.6	470	1.0	675
12,	—0.3	135	1.0	675	4.6	5000	2.0	1370	2.3	1640	1.4	925	0.3	325	—0.3	135	0.1	250	—0.2	155	1.1	735	1.0	675
13,	—0.3	135	1.2	795	4.6	5000	1.4	925	2.1	1460	1.4	925	0.3	325	—0.3	135	0.1	250	—0.4	120	1.6	1065	1.5	995
14,	—0.3	135	1.5	995	4.3	4400	1.0	675	2.0	1370	1.6	1065	0.2	285	—0.3	135	0.0	215	—0.5	110	1.3	860	1.8	1210
15,	—0.3	135	1.4	925	3.8	3550	0.5	420	1.9	1290	1.5	995	0.2	285	—0.4	120	0.0	215	—0.5	110	1.6	1065	1.2	795
16,	—0.3	135	1.4	925	3.6	3240	0.5	420	1.5	995	1.2	795	0.2	285	—0.4	120	0.0	215	—0.5	110	1.2	795	*1.2	795
17,	—0.3	135	1.5	995	2.9	2300	0.2	285	1.2	795	1.0	675	0.8	570	—0.4	120	0.0	215	—0.5	110	1.2	795	*1.2	795
18,	0.0	215	1.5	995	2.6	1950	1.0	675	1.2	795	1.0	675	0.6	470	—0.5	110	0.0	215	—0.5	110	1.1	735	*1.2	795
19,	12.0	28300	1.5	995	2.9	2300	1.1	735	1.2	795	1.0	675	0.6	470	—0.5	110	0.0	215	—0.5	110	1.0	675	*1.2	795
20,	5.6	7100	1.2	795	2.9	2300	1.4	925	1.2	795	1.0	675	0.5	420	—0.5	110	0.0	215	—0.6	100	1.0	675	*1.2	795
21,	4.0	3880	1.4	925	2.9	2300	3.0	2425	1.4	925	0.9	620	0.5	420	—0.5	110	0.0	215	—0.6	100	1.0	675	*1.2	795
22,	8.2	14300	5.6	7100	4.8	5400	3.4	2950	1.2	795	0.6	470	0.3	325	—0.5	110	0.0	215	—0.6	100	1.2	795	*1.2	795
23,	6.0	8020	5.3	6440	4.6	5000	3.5	3095	1.6	1065	0.6	470	0.3	325	—0.6	100	0.0	215	—0.4	120	1.2	795	*1.2	795
24,	5.6	7100	2.8	2180	4.6	5000	3.6	3240	2.0	1370	0.5	420	0.3	325	—0.6	100	0.0	215	—0.4	120	1.5	995	*1.2	795
25,	4.0	3880	2.9	2300	4.6	5000	3.7	3390	2.2	1550	0.5	420	0.2	285	—0.6	100	0.0	215	—0.4	120	1.9	1290	*1.2	795
26,	3.0	2425	2.9	2300	4.6	5000	5.7	7330	2.0	1370	0.4	370	0.2	285	—0.6	100	0.2	285	—0.4	120	3.0	2425	*1.2	795
27,	2.5	1840	3.4	2950	4.5	4800	4.9	5600	2.0	1370	0.3	325	0.2	285	—0.6	100	0.2	285	—0.3	135	2.6	1950	*1.2	795
28,	2.5	1840	†13.0	32650	4.5	4800	4.0	3880	1.9	1290	0.3	325	0.2	285	—0.6	100	0.7	520	0.7	520	2.4	1740	*1.2	795
29,	2.0	1370	------	------	3.0	2425	3.5	3095	1.8	1210	0.3	325	0.2	285	—0.6	100	0.9	620	0.8	570	2.6	1950	*2.0	1370
30,	2.0	1370	------	------	3.5	3095	3.2	2680	1.9	1290	0.3	325	0.2	285	—0.6	100	0.8	570	0.9	620	2.8	2180	7.0	10660
31,	2.0	1370	------	------	3.4	2950	------	------	2.0	1370	------	------	0.2	285	—0.6	100	------	------	0.0	215	------	------	5.4	6660

†Max. 14.5 at 4 p. m.,=39900 sec.-ft.
*River frozen; measurements to top of ice.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CLARION RIVER, AT CLARION, CLARION COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.5	6880	3.9	3710	2.1	1460	3.1	2550	2.4	1740	0.7	520	0.5	420	—0.4	120	4.0	3880	4.9	5600	1.7	1135	2.6	1950
2,	4.3	4400	3.9	3710	2.1	1460	3.5	3095	3.1	2550	0.7	520	0.5	420	—0.5	110	3.5	2680	*7.7	12730	2.9	2300	2.9	2300
3,	6.8	10080	3.6	3240	2.0	1370	2.8	2180	2.9	2300	0.5	420	0.4	370	—0.2	155	2.9	2300	6.0	8020	1.6	1065	2.6	1950
4,	5.4	6660	2.9	2300	1.8	1210	2.4	1740	2.4	1740	0.5	420	0.4	370	—0.2	155	2.2	1550	4.6	5000	1.5	995	2.6	1950
5,	5.0	5800	2.8	2180	1.8	1210	2.9	2300	2.2	1550	0.3	325	0.2	285	- 0.1	180	2.0	1370	4.3	4400	1.5	995	2.5	1840
6,	4.6	5000	2.6	1950	1.8	1210	4.1	4050	2.0	1370	0.5	420	0.0	215	—0.6	100	8.2	14300	3.0	2425	1.5	995	2.5	1840
7,	3.5	3095	2.6	1950	1.4	925	4.6	5000	1.8	1210	0.4	370	0.0	215	0.0	215	7.2	11240	3.9	3710	2.0	1370	2.0	1370
8,	3.4	2950	2.4	1740	1.1	735	5.3	6440	1.6	1065	0.4	370	0.0	215	0.0	215	5.0	5800	4.1	4050	3.1	2550	1.9	1290
9,	3.0	2425	2.0	1370	1.1	735	4.6	5000	1.6	1065	0.2	285	0.0	215	0.0	215	4.3	4400	3.0	2425	2.7	2060	1.9	1290
10,	2.9	2300	1.9	1290	1.3	860	4.3	4400	1.5	995	0.2	285	0.0	215	0.0	215	6.8	10080	2.8	2180	2.2	1550	2.0	1370
11,	2.9	2300	1.6	1065	1.5	995	4.0	3880	1.5	995	0.2	285	0.0	215	0.0	215	5.2	6220	3.0	2425	2.0	1370	2.2	1550
12,	3.4	2950	1.6	1065	2.0	1370	3.6	3240	1.4	925	1.0	675	—0.2	155	0.0	215	4.2	4220	2.7	2060	2.0	1370	2.9	2300
13,	4.0	3880	1.6	1065	2.4	1740	3.3	2810	1.4	925	3.6	3240	—0.4	120	0.0	215	4.2	4220	2.5	1840	2.0	1370	4.9	5600
14,	6.6	9530	1.5	995	2.6	1950	3.1	2550	1.4	925	2.0	1370	—0.2	155	0.0	215	2.9	2300	2.5	1840	2.0	1370	5.4	6660
15,	9.6	19020	2.8	2180	2.5	1840	5.6	7100	1.4	925	1.6	1065	0.0	215	0.0	215	5.4	6660	2.8	2180	2.0	1370	5.0	5800
16,	7.0	10660	3.3	2810	2.1	1460	4.9	5600	1.4	925	1.0	675	0.0	215	1.2	795	8.0	13660	2.3	1640	1.9	1290	5.7	7330
17,	6.2	8500	2.7	2060	1.8	1210	4.6	5000	1.2	795	1.0	675	0.0	215	1.9	1290	5.2	6220	2.2	1550	1.9	1290	5.5	6880
18,	5.7	7330	3.7	3390	2.1	1460	3.6	3240	1.0	675	1.0	675	0.0	215	1.4	925	4.8	5400	4.6	5000	3.4	2950	5.0	5800
19,	3.0	2425	5.2	6220	3.2	2680	3.2	2680	1.2	795	1.0	675	0.0	215	1.0	675	3.2	2680	5.0	5800	2.8	2180	4.1	4050
20,	2.9	2300	5.0	5800	2.9	2300	3.4	2950	1.0	675	1.0	675	0.0	215	1.0	675	3.0	2425	3.9	3710	4.8	5400	4.0	3880
21,	2.9	2300	4.0	3880	2.7	2060	5.1	6010	1.0	675	0.8	570	0.0	215	1.0	675	2.7	2060	3.4	2950	3.6	3240	4.0	3880
22,	2.8	2180	2.7	2060	3.0	2425	4.2	4220	1.0	675	0.6	470	—0.2	155	0.5	420	2.7	2060	3.2	2680	3.3	2810	3.0	2425
23,	2.6	1950	2.7	2060	3.4	2950	4.7	5200	1.0	675	0.4	370	—0.3	135	0.2	285	2.2	1550	3.3	2810	3.1	2550	2.9	2300
24,	1.9	1290	2.4	1740	3.6	3240	4.4	4600	0.9	620	0.4	370	0.0	215	0.3	325	2.0	1370	2.9	2300	3.0	2425	2.8	2180
25,	1.6	1065	2.4	1740	3.0	2425	3.6	3240	0.9	620	0.4	370	0.0	215	0.6	470	2.0	1370	2.4	1740	3.7	3390	2.8	2180
26,	1.6	1065	2.5	1840	3.0	2425	3.4	2950	0.9	620	0.5	420	0.0	215	4.1	4050	2.0	1370	2.2	1550	3.6	3240	2.6	1950
27,	1.5	995	2.4	1740	2.8	2180	3.1	2550	0.9	620	0.5	420	—0.3	135	3.3	2810	1.7	1135	2.0	1370	3.4	2970	2.6	1950
28,	5.9	7790	2.6	1950	5.1	6010	2.7	2060	0.9	620	0.5	420	—0.2	155	1.8	1210	1.3	860	2.0	1370	3.5	3095	2.8	2180
29,	7.1	10950	.....	.....	4.2	4220	2.5	1840	0.9	620	0.8	570	—0.2	155	10.3	21640	2.4	1740	2.0	1370	3.0	2425	1.6	1065
30,	5.0	5800	.....	.....	3.6	3240	2.7	2060	0.9	620	0.6	470	—0.2	155	7.6	12420	5.7	7330	1.7	1135	2.7	2060	2.4	1740
31,	4.6	5000	.....	.....	3.5	3095	.....	.....	0.7	520	.....	.....	—0.3	135	5.0	5800	.....	.....	1.8	1210	.....	.....	2.5	1840

*8.0 at 2 p. m.=13660 sec. ft.

ESTIMATED MONTHLY DISCHARGE OF CLARION RIVER AT CLARION, CLARION COUNTY.

(Drainage area 910 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1909.					
November,		100			
December,	120	100	112	0.123	0.142
1910.					
January,	28300	120	2749	3.021	3.483
February,	39900	675	2744	3.015	3.140
March,	23600	1950	7262	7.980	9.200
April,	7330	285	2060	2.264	2.526
May,	2425	795	1405	1.544	1.780
June,	2180	325	893	.981	1.094
July,	570	285	335	.368	.425
August,	250	100	138	.152	.175
September,	620	100	249	.274	.305
October,	620	100	224	.246	.284
November,	2425	100	792	.870	.971
December,	10660	675	1479	1.625	1.874
The year,	39900	100	1694	1.862	25.257
1911.					
January,	19020	995	5125	5.632	6.493
February,	6220	995	2396	2.633	2.742
March,	6010	735	2015	2.214	2.552
April,	7100	1740	3684	4.048	4.517
May,	2550	520	1001	1.100	1.268
June,	3240	285	613	0.674	0.752
July,	420	120	218	0.240	0.277
August,	21640	100	1846	2.029	2.339
September,	14300	860	4415	4.852	5.413
October,	13660	1135	3196	3.512	4.049
November,	5400	995	2105	2.313	2.610
December,	7330	1065	2925	3.214	3.745
The year,	21640	100	2642	2.705	36.757

RED BANK CREEK.

DESCRIPTION OF BASIN.

Red Bank creek, an important feeder of the Allegheny river from Jefferson, Clarion and Armstrong counties, drains an area of approximately 585 square miles. Rising in two streams, Sandy Lick and North Branch, the former heading in Clearfield county, and the latter in Jefferson county, Red Bank creek is formed by their junction at Brookville, Jefferson county, and thence flows in a general westerly direction, with many twists and turns, to its mouth at Red Bank, a distance of about 44 miles. The stream flows through a hilly country, sparsely populated, except in the valley where farming and lumbering is carried on. The slope of the creek is rapid, flowing as it does in a narrow gorge between high hills, the channel being full of large rocks. The junction lies at an approximate elevation of 1,235 feet, and the mouth at 844 feet, giving the stream an average fall of 9 feet per mile. There are a few boroughs and numerous villages along the stream, some of which obtain their domestic water supply from it. Some bituminous coal mining and oil and gas wells are found in this basin.

The mean annual precipitation over this watershed is from 40 to 50 inches.

The discharge of this stream has been measured at St. Charles since October 19th, 1909, approximately 15 miles above the mouth.

OHIO BASIN—STATION NO. 11.

RED BANK CREEK AT ST. CHARLES, PA.

DESCRIPTION OF STATION.

This station was established on October 19th, 1909, by the Water Supply Commission of Pennsylvania, in co-operation with the Flood Commission of Pittsburg, and is located on a single span, wooden, through-truss bridge at St. Charles, approximately 15 miles above the mouth.

The channel is straight for a short distance above and below the station. The right bank overflows in extreme high stages, while the left bank is high and not subject to overflow. The bed is composed of large rocks but is fairly regular and permanent. There is no velocity at low stages.

Discharge measurements are taken from the upstream side of the bridge and by wading, at lowest stages. The initial point for soundings is top edge of bridge seat, north abutment.

A chain gage is fastened to the bridge floor on the upstream side, fifty feet from the north abutment. The length of chain from the bottom of the weight to the marker is 24.50 feet. The elevation of zero is arbitrary datum. Bench mark No. 1 is rod seat chiselled in east corner stone, upper course of nose of east abutment (Left hand looking downstream), painted white, seven feet more or less below top of bridge seat; elevation, 13.32 feet above gage datum. Bench mark No. 2 is rod seat in southeast corner of top of same abutment (bridge seat), painted white, seven feet more or less above B. M. No. 1; elevation, 20.21 feet above gage datum. The gage is read twice daily by W. H. Bish.

Since the establishment of this station eleven discharge measurements have been made.

DISCHARGE MEASUREMENTS OF RED BANK CREEK AT ST. CHARLES, CLARION COUNTY, PENNA.

(Drainage area 540 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean Velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1910.							
1	Mar. 4,	Scheidenhelm,	135	994	7.75	7.03	7697	
2	Mar. 4,	Scheidenhelm,	135	994	7.58	7.04	7539	
3	May 26,	Drake,	130	401	1.40	2.67	562	
4	June 30,	Gannett,	80	147	0.24	1.03	36	
5	Aug. 10,	Drake,	49	29	0.51	.74	15	Wading msmt 300 ft. above bridge.
6	Sept. 27,	Drake,	135	503	3.14	3.29	1579	
7	Nov. 7,	Ryder,	120	273	0.87	1.72	238	
	1911.							
8	June 23,	Drake,	52	70	1.05	1.14	74	(Original computations not in this office.)
9	Oct. 19,	Reckord,	135	732	4.60	4.74	3367	
10	Oct. 25,	Ryder,	133	440	1.45	2.55	638	
	1912.							
11	July 29,	Boehringer,	128	351	1.24	2.04	436	0.6 measurement.

DISCHARGE TABLE FOR RED BANK CREEK AT ST. CHARLES, CLARION COUNTY, FROM OCT. 30, 1909, TO DECEMBER 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.60	5	.10	405	.60	1490	.10	4030	.60	6805
.70	10	.20	450	.70	1630	.20	4215	.70	6990
.80	15	.30	495	.80	1780	.30	4400	.80	7175
.90	25	.40	540	.90	1930	.40	4585	.90	7360
1.00	40	.50	595	4.00	2090	.50	4770	7.00	7545
.10	60	.60	650	.10	2250	.60	4955	.10	7730
.20	80	.70	705	.20	2420	.70	5140	.20	7915
.30	110	.80	765	.30	2590	.80	5325	.30	8100
.40	140	.90	825	.40	2760	.90	5510	.40	8285
.50	175	3.00	890	.50	2930	6.00	5695	.50	8470
.60	210	.10	970	.60	3110	.10	5880	.60	8655
.70	245	.20	1060	.70	3290	.20	6065	.70	8840
.80	285	.30	1150	.80	3475	.30	6250	.80	9025
.90	325	.40	1250	.90	3660	.40	6435	.90	9210
2.00	365	.50	1360	5.00	3845	.50	6620	8.00	9395

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF RED BANK CREEK, AT ST. CHARLES, CLARION COUNTY, PENNA.

1909.	OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	1.03	46	1.21	83
2,	------	------	.93	30	1.17	74
3,	------	------	.95	32	1.15	70
4,	------	------	.89	24	.98	37
5,	------	------	.91	26	.95	32
6,	------	------	.89	24	1.01	42
7,	------	------	.89	24	1.01	42
8,	------	------	1.03	46	*1.03	46
9,	------	------	.86	21	*1.05	50
10,	------	------	.87	22	*1.13	66
11,	------	------	.88	23	*1.05	50
12,	------	------	.89	24	*1.02	44
13,	------	------	.89	24	*1.23	89
14,	------	------	.89	24	2.25	472
15,	------	------	1.00	40	2.55	622
16,	------	------	.97	36	2.17	436
17,	------	------	1.06	52	1.97	353
18,	------	------	1.03	46	1.73	257
19,	------	------	.99	38	2.51	600
20,	------	------	1.27	101	*2.95	858
21,	------	------	1.09	58	*3.23	1087
22,	------	------	1.27	101	*3.07	946
23,	------	------	1.35	125	*2.92	838
24,	------	------	1.55	192	*2.71	711
25,	------	------	1.49	172	*2.72	717
26,	------	------	1.39	137	*2.43	556
27,	------	------	1.31	113	*2.30	495
28,	------	------	1.18	76	*2.61	256
29,	------	------	1.25	95	*2.52	606
30,	1.00	40	1.27	101	*2.49	590
31,	.95	32	------	------	*1.85	305

*Ice under gage.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF RED BANK CREEK, AT ST. CHARLES, CLARION COUNTY, PENNA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1.	*1.58	203	2.55	622	8.59	‡10500	2.27	482	2.92	838	1.94	341	1.19	78	1.04	48	1.09	58	1.94	341	1.54	189	3.12	988
2,	*2.26	477	2.28	486	8.39	‡10200	2.10	405	2.71	711	1.99	361	1.17	74	1.07	54	.99	38	1.78	277	1.61	214	2.75	735
3.	*3.70	1630	2.48	584	8.14	‡9700	2.01	360	2.56	628	2.25	472	.91	26	1.17	74	1.32	116	1.67	234	1.91	329	2.56	628
4,	*3.70	1630	2.60	650	7.27	8050	2.37	526	2.49	590	2.37	526	1.21	83	.93	30	4.47	2880	1.56	196	1.94	341	2.48	584
5,	*3.60	1490	2.52	606	6.68	6950	3.31	1160	2.39	536	2.12	414	1.10	60	.77	14	3.15	1010	1.48	168	1.80	285	2.19	446
6.	*4.00	2090	2.37	518	6.98	7510	3.06	938	2.21	454	2.07	393	1.11	62	.75	12	2.52	606	1.50	175	1.72	253	2.25	472
7,	*3.95	2010	2.04	381	7.83	9080	2.63	666	2.09	401	2.03	377	1.03	46	.73	12	2.09	401	1.74	261	1.70	245	1.92	333
8.	*4.30	2590	2.21	454	6.18	6030	2.40	540	2.05	385	1.93	337	1.10	60	.87	22	1.77	273	1.67	234	1.60	210	1.85	305
9,	*4.05	2170	2.35	518	4.98	3710	2.28	486	2.02	373	1.85	305	1.39	137	.71	10	1.55	192	1.53	186	1.64	224	2.00	365
10.	*3.75	1700	2.31	500	4.32	2640	2.18	441	2.05	385	1.88	317	1.19	78	.81	16	1.49	172	1.59	206	1.64	224	1.84	301
11,	*3.55	1420	2.12	414	3.93	1980	+2.10	405	1.96	349	1.94	341	1.31	113	.91	26	1.23	89	1.44	154	1.83	297	1.75	265
12,	*3.40	1250	2.02	373	3.58	1460	+2.10	405	1.87	313	2.01	369	1.26	98	.89	24	1.45	158	1.36	128	2.12	414	1.84	301
13.	*3.40	1250	2.06	389	3.48	1340	+2.10	405	1.72	253	1.91	329	1.22	86	1.00	40	1.28	104	1.37	131	2.07	393	1.80	285
14,	*3.30	1150	2.08	397	3.18	1040	+2.10	405	1.71	249	1.82	293	.86	21	.94	31	1.17	74	1.34	122	1.96	349	1.80	285
15.	*3.30	1150	2.08	397	3.18	1040	+2.00	365	1.69	242	1.67	234	1.13	66	1.15	70	1.25	95	1.34	122	2.12	414	1.85	305
16,	*3.20	1060	2.77	747	3.03	914	+2.00	365	1.67	234	1.69	242	.96	34	1.09	58	1.17	74	1.34	122	2.18	441	1.86	309
17.	*3.20	1060	3.86	1870	3.08	954	+2.00	365	1.59	206	1.57	200	1.96	349	.91	26	1.09	58	1.31	113	2.24	468	1.88	317
18,	a7.03	7600	3.66	1570	2.93	844	+2.30	495	1.71	249	1.57	200	1.51	178	1.01	42	.82	17	.97	36	2.24	468	*1.95	345
19,	7.10	7730	3.28	1130	2.93	844	+2.60	650	1.77	273	1.67	234	1.55	192	1.71	249	1.22	86	1.19	78	2.14	423	*1.90	325
20,	5.80	5320	3.01	898	3.53	1400	2.81	771	1.71	249	1.59	206	1.36	128	1.21	83	1.17	74	1.16	72	2.03	377	*1.90	325
21,	6.10	5880	3.31	1160	3.98	2060	3.36	1210	1.93	337	1.52	182	1.21	83	1.14	68	1.19	78	1.16	72	2.04	381	*2.02	373
22	6.35	6340	4.14	2320	3.83	1820	3.41	1260	2.63	666	1.42	147	1.20	80	1.14	68	1.15	70	1.49	172	2.08	397	*1.92	333
23,	5.30	4400	3.80	1870	3.57	1450	3.06	938	2.63	666	1.39	116	1.05	50	1.11	62	.97	36	1.67	234	2.10	405	*1.98	357
24,	4.55	3020	3.26	1110	3.47	1330	3.01	898	2.45	568	1.52	182	.93	30	.97	36	2.55	622	1.50	175	2.42	551	*2.02	373
25,	3.80	1780	3.11	979	3.47	1330	c5.31	4420	2.65	678	1.59	206	1.21	83	.97	36	d4.97	3790	1.64	224	2.92	838	*2.22	459
26.	3.30	1150	2.98	877	3.33	1180	5.36	4510	2.59	644	1.01	42	1.17	74	1.39	137	4.32	2620	1.65	228	3.04	922	*2.03	377
27	3.65	1560	3.51	1370	2.88	812	4.61	3130	2.37	526	1.03	46	.96	34	1.38	134	3.33	1180	1.72	253	2.83	783	*1.90	325
28,	3.30	1150	b10.21	‡13500	2.71	711	3.81	1800	2.07	393	1.33	119	1.10	72	1.19	78	2.87	807	1.84	301	2.60	650	*1.95	345
29	3.15	1010			2.53	612	3.40	1320	2.02	373	1.35	125	1.15	70	1.25	95	2.42	551	1.84	301	3.52	1390	e3.68	1600
30,	2.88	813			2.53	612	3.26	1110	2.03	377	1.21	83	.93	30	1.14	68	2.15	428	1.70	245	3.20	1060	f7.41	8300
31.	2.75	735			2.39	536			2.05	385			.76	13	1.07	54			1.62	217			5.40	4580

*Frozen.
aIce went out. Max. 10 feet –‡13100 sec. ft.
bMax. 10.46 at 5 p. m. ‡14000 sec.-ft.
cMax. 5.91 at 5 p. m – 5530 sec.-ft.
dMax. 5.37 at 9 a. m. 4530 sec.-ft.
eIce went out.
fMax. 7.72 at 9 a. m.—8880 sec. ft.
+Interpolated.
‡Estimated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF RED BANK CREEK, AT ST. CHARLES, CLARION COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.52	2970	3.26	1110	2.56	628	3.13	1000	2.70	705	1.14	68	1.01	42	0.78	14	3.23	1080	5.07	3970	2.05	385	1.77	273
2,	5.02	3880	3.09	962	2.01	369	2.98	877	2.95	858	1.14	68	1.08	56	0.75	12	3.09	962	d13.01	‡19000	2.13	418	1.87	313
3,	6.09	5800	2.79	759	2.66	683	2.83	783	2.95	858	1.14	68	0.98	37	1.08	56	2.16	432	6.34	6320	2.03	377	2.37	526
4,	4.82	3510	2.79	759	2.66	683	2.63	666	2.40	540	1.14	68	0.91	26	1.08	56	1.99	361	5.74	5210	1.95	345	2.24	468
5,	3.77	1740	2.92	838	2.16	432	3.78	1750	2.25	472	1.12	64	0.84	19	1.95	345	7.31	8120	4.74	3360	1.90	325	2.14	423
6,	3.25	1100	2.54	617	2.26	477	3.73	1680	2.07	393	1.07	54	0.76	13	2.01	369	6.23	6120	3.69	1620	1.77	273	1.92	333
7,	3.27	1120	2.22	459	2.16	432	3.98	2060	2.05	385	1.04	48	0.88	23	1.88	317	4.39	2740	5.34	4470	2.80	765	1.80	285
8,	3.02	910	2.29	490	1.76	269	3.78	1750	2.00	365	1.10	60	1.18	76	1.53	186	3.51	1370	4.37	2710	3.00	890	1.70	245
9,	2.92	840	2.34	513	2.19	446	3.53	1400	1.80	285	1.02	44	1.18	76	1.45	158	3.09	962	4.14	2320	2.50	595	2.22	459
10,	2.37	526	2.22	459	2.51	600	4.03	2140	1.87	313	1.07	54	1.18	76	1.25	95	2.99	884	3.97	2040	2.37	526	3.02	906
11,	2.72	717	1.84	301	2.89	819	3.58	1460	1.80	285	1.00	40	0.98	37	1.31	113	3.16	1020	3.14	1010	2.33	508	3.17	1030
12,	4.72	3330	1.92	333	2.86	801	3.03	914	1.83	297	1.14	68	0.98	37	1.21	83	3.11	979	2.97	870	2.35	518	3.27	1120
13,	5.67	5080	2.26	477	3.16	1024	3.23	1090	1.77	273	1.27	101	1.08	56	1.15	70	3.33	1180	2.74	729	2.63	666	5.62	4990
14,	a7.42	8320	2.36	522	3.06	938	3.13	1000	1.65	228	1.24	92	1.04	48	1.18	76	3.26	1110	2.64	672	2.58	639	5.77	5270
15,	7.35	8190	4.36	2690	2.89	819	4.63	3160	1.57	200	1.20	80	1.14	68	1.21	83	c8.83	‡10900	2.81	771	2.23	464	5.02	3880
16,	5.97	5640	3.54	1410	2.53	612	3.73	1680	1.60	210	1.12	64	1.18	76	1.15	70	7.76	8950	2.97	870	2.21	454	4.37	2710
17,	4.49	2910	3.39	1240	2.91	832	3.63	1530	1.60	210	1.20	80	1.18	76	2.18	441	5.76	5250	2.69	700	2.15	428	5.17	4160
18,	3.49	1350	b5.49	4750	3.06	938	3.20	1060	1.47	164	0.97	36	1.28	104	2.05	385	4.71	3310	6.49	6600	4.18	2390	4.37	2710
19,	3.12	990	5.09	4010	3.06	938	3.16	1020	1.43	150	1.14	68	0.74	12	1.35	125	3.31	1160	4.79	3460	4.23	2470	4.07	2200
20,	2.87	810	4.59	3090	3.16	1020	3.68	1600	1.20	80	1.14	68	0.78	14	1.21	83	2.96	864	3.77	1730	3.83	1820	3.67	1590
21,	2.75	735	3.34	1190	3.16	1020	4.26	2520	1.15	70	1.04	48	0.74	12	1.11	62	2.73	723	3.55	1420	2.93	844	3.42	1270
22,	2.79	759	3.14	1010	3.01	898	3.86	1870	1.37	131	0.94	31	0.78	14	1.25	95	2.56	628	3.47	1330	2.58	639	2.87	807
23,	2.55	622	2.99	884	3.16	1020	3.33	1180	1.23	89	0.94	31	1.14	68	1.25	95	2.39	536	3.03	914	2.33	508	2.67	688
24,	2.12	414	2.46	573	3.01	898	3.73	1680	1.20	80	1.06	52	1.18	76	1.18	76	2.09	401	2.80	765	3.03	914	2.87	807
25,	1.87	313	2.49	590	2.76	741	4.43	2810	1.17	74	1.03	46	1.14	68	1.28	104	1.96	349	2.47	578	3.43	1280	2.77	747
26,	2.35	518	2.74	729	2.66	683	4.33	2640	1.10	60	1.30	110	1.08	56	1.58	203	1.81	289	2.30	495	2.63	666	2.52	606
27,	2.42	551	3.36	1210	2.83	783	3.96	2030	1.07	54	1.20	80	1.14	68	2.08	397	1.73	257	2.30	495	2.53	612	3.07	946
28,	5.49	4750	3.04	922	3.26	1110	2.63	666	1.03	46	1.08	56	1.08	56	4.38	2730	4.59	3090	2.17	436	2.33	508	2.67	688
29,	4.49	2910	------	------	3.11	979	2.53	612	1.13	66	1.03	46	1.01	42	7.35	8190	4.46	2860	2.03	377	2.48	584	2.50	595
30,	4.57	3060	------	------	3.09	962	2.43	556	1.00	40	1.00	40	1.04	48	6.31	6270	4.43	2810	2.00	365	2.43	556	2.30	495
31,	3.82	1810	------	------	3.16	1020	------	------	1.17	74	------	------	0.94	31	4.21	2440	------	------	2.05	385	------	------	3.27	1120

a8.32 feet at 5 p. m.—‡10000 sec. ft.
b5.74 feet at 5 p. m.—5210 sec. ft.
c9.81 feet at 5 p. m.—‡12800 sec. ft.
d13.04 feet at 9 a. m.—‡19100 sec. ft.
‡Estimated.

ESTIMATED MONTHLY DISCHARGE OF RED BANK CREEK AT ST. CHARLES, CLARION COUNTY.

(Drainage area 540 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1909.					
November,	192	21	62	.115	.128
December,	1087	32	369	.683	.788
1910.					
January,	‡13100	203	2349	4.350	5.015
February,	‡14000	373	1310	2.426	2.526
March,	‡10500	536	3182	5.893	6.794
April,	5530	365	1041	1.928	2.151
May,	838	206	436	0.807	0.930
June,	526	42	258	0.478	0.534
July,	349	13	83	0.154	0.177
August,	249	10	57	0.106	0.122
September,	4530	17	559	1.035	1.154
October,	341	36	186	0.344	0.397
November,	1390	189	464	0.858	0.958
December,	8880	265	827	1.531	1.765
The year,	‡14000	10	896	1.659	22.523
1911.					
January,	‡10000	313	2459	4.554	5.250
February,	5210	301	1175	2.176	2.266
March,	1110	269	770	1.426	1.644
April,	3160	556	1506	2.789	3.112
May,	858	40	259	.480	.553
June,	110	31	61	.113	.126
July,	104	12	49	.091	.105
August,	8190	12	768	1.422	1.639
September,	‡12800	257	2323	4.302	4.800
October,	‡19100	365	2451	4.539	5.233
November,	2470	273	745	1.380	1.540
December,	5270	245	1378	2.552	2.942
The year,	‡19100	12	1162	2.152	29.210

‡Estimated.

MAHONING CREEK.

DESCRIPTION OF BASIN.

Mahoning creek, a tributary of the Allegheny river from Armstrong, Jefferson, Clearfield and Indiana counties, drains an area of approximately 425 square miles. Rising in the southwestern part of Clearfield county this stream flows in a general westerly direction, with many windings, through a rough, hilly country, to a small extent covered with second growth timber, to its mouth at Mahoning, on the Allegheny river, a distance of approximately 65 miles. The headwaters of this stream are barren and not farmed to any considerable extent, but numerous bituminous coal mines are located in this region. In the lower region some farming is carried on. The watershed is sparsely inhabited, although a few large boroughs are located in the valley of the stream. The valley is not wide, the stream in general flowing between hills and often rapid in its descent, but at numerous points slow and sluggish. The channel is rocky and usually covered with boulders. The stream is not used for domestic supply but, to some extent, for industrial purposes.

The mean annual precipitation over this watershed is from 40 to 50 inches.

The discharge has been measured since October 18th, 1909, at Furnace Bridge (Dee), about two and one-half miles above the mouth.

OHIO BASIN—STATION NO. 12.

MAHONING CREEK AT FURNACE BRIDGE (DEE), PA.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania, in cooperation with the Flood Commission of Pittsburg, on October 18th, 1909, and is located on a single span, steel, through truss, highway bridge about two and one-half miles above the mouth, at the village of Dee.

The channel above and below the station is straight for 800 feet and 150 feet respectively. The right bank is high and not subject to overflow, while the left bank overflows through a very small section during extreme floods. The bed is rocky and permanent.

Discharge measurements are taken from the downstream side of the bridge and by wading at low stages. The initial point for soundings is top edge of left bridge seat, downstream side.

A standard chain gage is attached to the downstream hand-rail. The length of chain from bottom of weight to marker is 25.23 feet. The elevation of zero is arbitrary datum. Bench mark No. 1 is upstream corner, right abutment, downstream wing, eighth course down from top; elevation, 17.43 feet above gage datum. Bench mark No. 2 is upstream corner of stone on top of B. M. No. 1; elevation, 18.54 feet above gage datum. Prior to February 2nd, 1910, readings were taken on a 14 foot staff gage bolted on the upstream wing of the right abutment, but on January 19th, 1910, this gage was carried out by ice, the present chain gage replacing the same and being referred to the same datum. The gage is read once daily by J. D. Bechtel.

Since the establishment of this station 16 discharge measurements have been made. Owing to the gage heights being unreliable, only the discharge measurements and discharge table have been published.

DISCHARGE MEASUREMENTS OF MAHONING CREEK AT FURNACE BRIDGE, ARMSTRONG COUNTY, PENNA.

(Drainage area 420 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	per Ft. sec.	Feet.	Sec.-ft.	
	1910.							
1	Mar. 2,	Stevenson,	148	1232	6.38	+8.03	7860	G. H. subject to correction.
2	Mar. 2,	Grant,	148	1232	6.79	8.05	8394	
3	Mar. 5,	Scheidenhelm,	148	1070	5.78	6.92	6156	
4	May 10,	Drake,	125	308	1.04	2.47	323	
5	May 26,	Drake,	138	306	0.96	2.42	295	
6	June 30,	Gannett,	88	226	0.62	2.01	140	
7	Sept. 27,	Drake,	148	563	2.49	4.01	1401	
8	Nov. 7,	Ryder,	122	255	0.60	2.18	153	
	1911.							
9	Jan. 17,	Sykes (F. C.),	148	680	3.49	5.05	2370	Spindle of meter tight.
10	Jan. 17,	Sykes (F. C.),	148	671	3.41	4.99	2284	Spindle of meter tight.
11	June 23,	Drake,	32	31	0.85	1.42	26.3	Wading msmt.
12	Oct. 20,	Reckord,	148	663	2.96	4.84	1965	
13	Oct. 20,	Reckord,	148	662	2.87	4.76	1899	
14	Oct. 24,	Ryder,	142	449	1.67	3.24	751	
	1912.							
15	July 29,	Boehringer,	108	317	1.15	2.60	363	
16	Oct. 9,	Boehringer,	106	260	0.64	2.07	167	Surface msmt.

DISCHARGE TABLE FOR MAHONING CREEK AT FURNACE BRIDGE, ARMSTRONG COUNTY, FROM OCT. 18, 1909.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.90	0	.90	535	.90	2125	.80	5390	.70	10200
1.00	7	3.00	590	5.00	2240	.90	5610	.80	10500
.10	8	.10	650	.10	2360	7.00	5840	.90	10800
.20	10	.20	710	.20	2490	.10	6070	9.00	11100
.30	15	.30	775	.30	2630	.20	6300	.10	11400
.40	22	.40	840	.40	2780	.30	6550	.20	11700
.50	30	.50	905	.50	2940	.40	6800	.30	12025
.60	40	.60	975	.60	3110	.50	7050	.40	12350
.70	55	.70	1050	.70	3280	.60	7300	.50	12675
.80	75	.80	1125	.80	3450	.70	7550	.60	13025
.90	100	.90	1200	.90	3620	.80	7800	.70	13375
2.00	125	4.00	1280	6.00	3800	.90	8050	.80	13750
.10	155	.10	1360	.10	3980	8.00	8300	.90	14125
.20	185	.20	1445	.20	4160	.10	8550	10.00	14500
.30	225	.30	1530	.30	4350	.20	8800	.10	14900
.40	270	.40	1620	.40	4550	.30	9050	.20	15300
.50	320	.50	1710	.50	4750	.40	9325	.30	15725
.60	370	.60	1800	.60	4950	.50	9600	.40	16150
.70	425	.70	1900	.70	5170	.60	9900	.50	16600
.80	480	.80	2010						

NOTE.—Owing to the gage heights at this station being unreliable, they have not been published, and only the discharge measurements and discharge table are furnished herewith.

OHIO BASIN—STATION NO. 13.

ALLEGHENY RIVER AT KITTANNING, PA.

DESCRIPTION OF STATION.

This station was established by the United States Geological Survey on August 18th, 1904, at the Market Street bridge, in the borough of Kittanning. On April 1st, 1907, this station was taken over by the Water Supply Commission of Pennsylvania, which has been operating it since that date.

The channel above and below the station is straight for 500 feet and 1,000 feet respectively. Both banks are high and do not overflow. The bed is of gravel and is permanent. The current is swift, and the water at low stages, is approximately three to four feet deep in the first three channels and six to eight feet deep in the last two channels.

Discharge measurements are made from the downstream side of the bridge, which is a five span, steel, through truss, highway bridge. The initial point for soundings is the left end of hand-rail, downstream side of bridge.

A standard chain gage is bolted to the upstream hand-rail in the first span from the left bank. The length of chain from bottom of weight to marker is 38.62 feet. Elevation of zero is arbitrary datum. Bench mark No. 1 is the left corner of top course of stones of left abutment; elevation, 33.83 feet above gage datum. The gage is read once daily by Blaine Mast.

Since the establishment of this station 39 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF ALLEGHENY RIVER, AT KITTANNING, ARMSTRONG COUNTY, PENNA.

(Drainage area 9,010 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
	1904.		Feet.	Sq. ft.	Ft. per sec.	Feet.	sec.-ft.	
1	Aug. 18,	Taylor,	620	2,615	0.82	2.40	2,140	
2	Sept. 19,	Murphy,	603	2,602	.79	2.26	2,046	
3	Sept. 29,	Grover,	720	4,010	1.77	4.42	7,087	
	1905.							
4	Mar. 18,	Grover and Morse,	869	10,480	4.11	12.00	43,090	Floats and meter.
5	Mar. 18,	do	869	10,340	4.27	11.85	44,150	**Floats.**
6	Mar. 19,	Grover,	869	14,570	6.92	16.55	100,800	do
7	Mar. 19,	Grover and Morse,	869	15,500	7.27	17.59	112,700	do
8	Mar. 19,	do	869	16,380	7.66	18.57	125,500	do
9	Mar. 19,	do	869	17,210	7.93	19.48	136,400	do
10	Mar. 19,	do	869	18,270	8.41	20.66	154,600	do
11	Mar. 19,	do	869	19,770	9.08	22.33	179,500	do
12	Mar. 19,	do	869	20,450	9.20	23.08	188,100	do
13	Mar. 20,	do	869	25,330	9.29	28.50	235,300	do
14	Mar. 20,	do	869	25,470	9.30	28.69	236,900	do
15	Mar. 20,	do	869	25,510	9.48	28.71	241,800	do
16	Mar. 20,	do	869	25,540	9.48	28.74	242,000	do
17	Mar. 21,	do	869	22,540	8.43	25.40	190,000	Floats and meter.
18	Mar. 21,	do	869	21,860	8.13	24.65	177,800	Floats.
19	Mar. 21,	do	869	21,440	8.28	24.18	177,500	
20	Mar. 22,	do	869	19,740	7.16	22.29	141,400	
21	Mar. 22,	do	869	19,200	7.20	21.69	138,400	
22	Mar. 22,	do	869	18,790	6.91	21.24	129,800	
23	Mar. 23,	do	869	17,000	6.57	19.25	111,700	
24	Mar. 24,	do	869	14,510	5.92	16.48	85,960	
25	Mar. 25,	do	869	14,110	5.94	16.04	83,840	
26	April 10,	Horton,	839	5,000	2.37	5.54	11,860	
27	April 11,	do	840	6,106	2.94	6.83	17,970	
28	April 14,	Horton,	825	5,552	2.58	6.17	14,320	
29	April 20,	do	791	4,919	2.24	5.45	11,040	
30	June 2,	Bolster,	680	3,597	1.45	3.73	5,222	
31	Aug. 30,	Murphy,	666	3,442	1.39	3.53	4,794	
32	Nov. 3,	do	768	4,654	2.13	5.10	9,941	
	1906.							
33	May 23,	Follansbee,	719	4,030	1.66	4.40	6,700	
	1907.							
34	May 30.	Horton,	861	7,267	3.48	8.00	25,280	
35	Sept. 11,	do	648	3,325	1.25	3.24	4,154	Surface msmt.
	1908.							
36	Aug. 23,	Bolster,	613	2,712	0.99	2.67	2,686	0.2 and 0.8 depths.
37	Sept. 25,	Ryder,	466	1,711	0.49	1.37	847	
	1910.							
38	Mar. 3,	Grant,	870	17,879	7.73	20.80	138,110	
39	Mar. 5,	Scheidenhelm,	858	16,372	7.24	19.08	118,330	

DISCHARGE TABLE FOR ALLEGHENY RIVER, AT KITTANNING, ARMSTRONG COUNTY, FROM AUG 18, 1904.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.30	775	.30	10535	.30	33725	.30	63220	.20	98590
.40	880	.40	10980	.40	34400	.40	64040	.30	99590
.50	990	.50	11440	.50	35100	.50	64870	.40	100600
.60	1100	.60	11900	.60	35800	.60	65700	.50	101620
.70	1220	.70	12370	.70	36500	.70	66540	.60	102640
.80	1340	.80	12840	.80	37200	.80	67390	.70	103670
.90	1465	.90	13315	.90	37900	.90	68240	.80	104710
2.00	1605	6.00	13800	10.00	38600	14.00	69100	.90	105750
.10	1755	.10	14285	.10	39310	.10	69970	18.00	106800
.20	1920	.20	14770	.20	40020	.20	70840	.10	107850
.30	2085	.30	15260	.30	40730	.30	71720	.20	108910
.40	2260	.40	15755	.40	41440	.40	72600	.30	109970
.50	2445	.50	16250	.50	42150	.50	73490	.40	111040
.60	2640	.60	16760	.60	42860	.60	74380	.50	112120
.70	2850	.70	17290	.70	43570	.70	75270	.60	113200
.80	3060	.80	17840	.80	44280	.80	76170	.70	114290
.90	3270	.90	18410	.90	44990	.90	77080	.80	115390
3.00	3490	7.00	19000	11.00	45700	15.00	77906	.90	116490
.10	3715	.10	19590	.10	46420	.10	78800	19.00	117600
.20	3940	.20	20190	.20	47140	.20	79700	.10	118710
.30	4165	.30	20790	.30	47860	.30	80600	.20	119820
.40	4390	.40	21400	.40	48590	.40	81500	.30	120930
.50	4620	.50	22025	.50	49320	.50	82410	.40	122050
.60	4850	.60	22650	.60	50050	.60	83320	.50	123170
.70	5080	.70	23275	.70	50780	.70	84230	.60	124290
.80	5335	.80	23900	.80	51520	.80	85170	.70	125410
.90	5580	.90	24525	.90	52260	.90	86070	.80	126546
4.00	5840	8.00	25150	12.00	53000	16.00	87000	.90	127670
.10	6105	.10	25800	.10	53750	.10	87930	20.00	128800
.20	6380	.20	26450	.20	54510	.20	88870	21.00	140200
.30	6660	.30	27100	.30	55280	.30	89810	22.00	152000
.40	6955	.40	27750	.40	56060	.40	90760	23.00	164200
.50	7260	.50	28400	.50	56840	.50	91720	24.00	176800
.60	7600	.60	29050	.60	57630	.60	92680	25.00	189600
.70	7985	.70	29700	.70	58420	.70	93650	26.00	203000
.80	8375	.80	30350	.80	59210	.80	94630	27.00	217000
.90	8775	.90	31025	.90	60000	.90	95610	28.00	231000
5.00	9200	9.00	31700	13.00	60800	17.00	96600	29.00	245000
.10	9635	.10	32375	.10	61600	.10	97590	30.00	259000
.20	10080	.20	33050	.20	62410				

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ALLEGHENY RIVER, AT KITTANNING, ARMSTRONG COUNTY, PA.

1904.	AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	2.90	3270	3.8	5335	3.8	5335	2.3	2085
2,	------	------	2.8	3060	4.0	5840	3.6	4850	2.6	2640
3,	------	------	2.8	3060	4.0	5840	3.4	4390	2.7	2850
4,	------	------	2.7	2850	3.8	5335	3.3	4165	2.8	3060
5,	------	------	2.8	3060	3.8	5335	3.1	3715	2.7	2850
6,	------	------	3.5	4620	3.4	4390	3.1	3715	2.5	2445
7,	------	------	3.3	4165	3.4	4390	3.2	3940	2.5	2445
8,	------	------	3.0	3490	3.1	3715	3.0	3490	2.6	2640
9,	------	------	2.7	2850	3.0	3490	2.8	3060	2.5	2445
10,	------	------	2.7	2850	2.8	3060	2.8	3060	2.3	2085
11,	------	------	2.8	3060	2.6	2640	2.8	3060	2.7	2850
12,	------	------	2.7	2850	3.4	4390	2.8	3060	b2.8	3060
13,	------	------	2.6	2640	3.6	4850	2.8	3060	2.8	3060
14,	------	------	2.4	2260	4.3	6660	2.7	2850	2.9	3270
15,	------	------	2.3	2085	4.4	6955	*2.7	2850	2.9	3270
16,	------	------	2.2	1920	4.1	6105	*2.7	2850	2.9	3270
17,	------	------	2.2	1920	4.0	5840	*2.6	2640	2.9	3270
18,	------	------	2.4	2260	3.7	5080	*2.6	2640	3.0	3490
19,	------	------	2.2	1920	3.5	4620	2.5	2445	3.3	4165
20,	------	------	2.2	1920	3.3	4165	2.5	2445	3.2	3940
21,	------	------	2.1	1755	3.2	3940	2.4	2260	3.0	3490
22,	------	------	2.0	1605	3.3	4165	2.4	2260	2.9	3270
23,	------	------	2.0	1605	3.3	4165	2.4	2260	2.9	3270
24,	------	------	2.0	1605	4.3	6660	2.3	2085	3.4	4390
25,	4.5	7260	2.0	1605	5.7	12370	2.4	2260	8.3	27100
26,	3.9	5580	2.0	1605	6.0	13800	2.4	2260	7.3	20790
27,	3.9	5580	3.4	4390	5.7	12370	2.4	2260	8.0	25150
28,	4.1	6105	4.6	7600	5.1	9635	2.3	2085	11.9	52260
29,	3.7	5080	4.5	7260	4.7	7985	2.3	2085	12.4	56060
30,	3.4	4390	4.1	6105	4.4	6955	2.3	2085	10.6	42860
31,	3.1	3715	------	------	4.1	6105	------	------	8.8	30350

aGage out of order. River stationary from Nov. 15-19, inc. Gage height interpolated.
bReading to top of ice Dec. 12 to 31.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ALLEGHENY RIVER, AT KITTANNING, ARMSTRONG COUNTY, PA.

1905.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	8.1	25800	9.8	37200			10.5	40400	5.3	10535	3.8	5335	4.4	6955	7.65	22960	3.1	3715	3.3	4165	4.7	7985	12.8	59210
2,	7.4	21400	9.6	35800			8.9	30500	4.9	8775	3.7	5080	4.8	8375	6.3	15260	3.1	3715	3.4	4390	4.6	7600	10.8	44280
3,	7.9	24525	9.6	35800	9.4	34400	7.7	23275	4.8	8375	3.6	4850	5.1	9635	5.3	10535	3.1	3715	3.6	4850	4.5	7260	14.9	77080
4,	8.5	28400	9.6	35800			7.3	20790	4.5	7260	3.4	4390	5.4	10980	4.7	7985	3.1	3715	5.0	9200	5.0	9200	14.8	76170
5,	7.4	21400					7.0	19000	4.2	6380	3.3	4165	6.8	17840	4.3	6660	2.8	3060	4.3	6660	5.1	9635	12.2	54510
6,	6.3	15260					6.8	17840			3.6	4850	6.6	16760	3.9	5580	2.8	3060	3.8	5335	5.3	10535	10.7	43570
7,	6.1	14285	9.5	35100			6.4	15755			4.3	6660	7.0	19000	3.8	5335	2.8	3060	3.6	4850	6.2	14770	9.0	31700
8,	6.2	14770			11.6	50050	5.9	13315			7.0	19000	9.2	33050	3.8	5335	2.6	2640	3.2	3940	7.0	19000	8.2	26450
9,	6.3	15260					5.6	11900			6.8	17840	7.7	23275	3.8	5335	2.5	2445	2.8	3060	8.0	25150	7.7	23275
10,	6.4	15755	9.0	31700			5.5	11440	5.5	11440	6.3	15260	7.4	21400	3.9	5580	2.5	2445	2.8	3060	7.6	22650	7.3	20790
11,	6.6	16760					6.4	15755	5.0	9200	5.9	13315	5.9	13315	4.0	5840	4.85	8575	3.0	3490	7.4	21400	7.0	19000
12,	10.4	41440					6.2	14770	4.7	7985	5.6	11900	6.0	13800	3.6	4850	7.4	21400	4.1	6105	6.8	17840	6.6	16760
13,	12.3	55280					6.2	14770	5.5	11440	5.2	10080	7.3	20790	5.4	10980	6.8	17840	5.5	11440	6.6	16760	6.4	15755
14,	13.6	65700	9.0	31700			5.8	12840	6.5	16250	5.2	10080	8.1	25800	6.2	14770	5.5	11440	5.3	10535	6.5	16250	6.0	13800
15,	15.4	81500					5.5	11440	6.9	18410	4.7	7985	8.6	29050	5.8	12840	5.0	9200	5.5	11440	6.3	15260	5.8	12840
16,	16.1	87900					5.4	10980	7.1	19590	4.5	7260	8.1	25800	6.0	13800	4.7	7985	5.4	10980	6.1	14285	5.2	10080
17,	16.1	87900	8.7	29700			5.3	10535	7.2	20190	4.5	7260	7.6	22650	6.5	16250	4.5	7260	5.25	10300	5.9	13315	4.7	7985
18,	14.6	74380			13.0	64500	5.3	10535	6.7	17290	5.0	9200	7.0	19000	5.6	11900	4.5	7260	4.8	8375	5.8	12840	4.5	7200
19,	14.4	72600			18.2	120000	5.1	9635	6.3	15260	6.1	14285	6.4	15755	4.8	8375	4.5	7260	5.6	11900	5.6	11900	4.4	6955
20,	14.4	72600			a 28.2	235500	5.3	10535	5.6	11900	7.4	21400	6.1	14285	4.2	6380	4.6	7600	6.2	14770	5.5	11440	4.3	6600
21,	14.4	72600	8.4	27750	24.8	183500	6.9	18410	5.1	9635	8.3	27100	5.8	12840	4.2	6380	4.5	7260	9.5	35100	5.2	10080	5.6	11900
22,	13.8	67390			21.8	137800	9.2	33050	4.7	7985	10.0	38600	5.4	10980	4.5	7260	4.4	6955	8.2	26450	4.8	8375	7.8	23900
23,	13.1	61600			18.4	103700	10.6	42860	4.5	7260	9.6	35800	4.2	6380	4.8	8375	4.1	6105	7.4	21400	4.7	7985	9.7	36500
24,	12.3	55280	8.1	25800	16.5	86500	9.4	34400	4.2	6380	9.3	33725	3.8	5335	5.2	10080	3.7	5080	7.3	20790	4.6	7600	9.6	35800
25,	11.4	48590			16.0	82000	8.8	30350	4.0	5840	7.8	23900	3.6	4850	4.8	8375	3.5	4620	7.3	20790	4.6	7600	8.1	25800
26,	10.6	42860			15.8	80500	7.2	20190	3.9	5580	6.7	17290	3.5	4620	4.6	7600	3.2	3940	6.7	17290	4.5	7260	7.2	20190
27,	10.1	39310			15.0	73400	6.8	17840	4.2	6380	6.4	15755	3.4	4390	4.2	6380	3.1	3715	6.3	15260	4.8	8375	6.9	18410
28,	10.0	38600	9.1	32375	14.3	67300	6.2	14770	4.2	6380	5.7	12370	3.3	4165	3.8	5335	3.1	3715	5.8	12840	6.0	13800	8.9	31025
29,	9.9	37900			13.7	62600	5.9	13315	4.4	6955	5.0	9200	3.1	3715	3.6	4850	3.1	3715	5.3	10535	9.2	33050	9.9	37900
30,	9.9	37900			12.6	54400	5.6	11900	4.4	6955	4.6	7600	11.4	48590	3.4	4390	3.2	3940	5.1	9635	12.0	53000	11.2	47140
31,	9.8	37200			11.8	48750			4.2	6380			10.6	42860	3.2	3940			4.9	8775			11.3	47860

River frozen Jan. 12 to March 18. Ice gorge Jan. 12 to Feb. 12 approximately.
a Maximum, 28.80 ft.=240,250 sec. ft. March 18 to April 2, special flood discharge curve used from measurements made at this time.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ALLEGHENY RIVER, AT KITTANNING, ARMSTRONG COUNTY, PA.

1906.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	9.7	36500	6.3	15260	4.5	7260	13.2	62410	4.7	7985	4.8	8375	2.5	2445	2.2	1920	2.6	2640	2.5	2445	7.7	23275	5.6	11900
2,	8.8	30350	5.8	12840	4.8	8375	11.8	51570	4.8	8375	4.6	7600	2.3	2085	2.3	2085	3.1	3715	3.8	5335	7.4	21400	5.2	10080
3	8.9	31025	5.1	9635	5.5	11440	10.0	38600	4.8	8375	4.5	7260	2.3	2085	2.1	1755	3.5	4620	4.1	6105	7.6	22650	5.1	9635
4,	9.1	32375	4.4	6955	5.9	13315	9.4	34400	6.3	15260	a 4.2	6380	2.4	2260	2.1	1755	3.4	4390	4.2	6380	6.2	14770	5.0	9200
5,	10.2	40080	4.5	7200	6.2	14770	8.6	29050	6.7	17290	3.9	5580	2.4	2260	2.0	1605	3.5	4620	3.8	5335	5.8	12840	5.3	10535
6,	9.8	37200	4.4	6955	6.9	18410	9.5	35100	6.7	17290	3.7	5080	2.4	2260	2.0	1605	3.6	4850	3.2	3940	5.6	11900	5.8	12840
7,	8.6	29050	4.3	6660	6.2	14770	10.2	40020	7.1	19590	9.3	33725	2.4	2260	2.1	1755	3.2	3940	3.4	4390	5.4	10980	13.8	67390
8,	7.3	20790	4.2	6380	5.9	13315	9.5	35100	5.6	11900	7.35	21095	2.4	2260	3.7	5080	2.9	3270	6.0	13800	5.1	9635	13.0	60800
9,	6.7	17290	4.1	6105	5.7	12370	8.8	30350	5.7	12370	5.6	11900	2.4	2260	4.9	8775	2.6	2640	7.2	20190	4.8	8375	11.6	50050
10,	5.4	10980	4.0	5840	5.5	11440	11.2	47140	5.6	11900	5.1	9635	2.3	2085	4.1	6105	2.4	2260	6.9	18410	4.6	7600	7.9	24525
11,	6.0	13800	3.9	5580	5.4	10980	13.2	62410	5.4	10980	4.7	7985	2.3	2085	5.5	11440	2.2	1920	6.9	18410	4.5	7260	10.5	42150
12,	5.7	12370	3.9	5580	5.3	10535	12.2	54510	5.4	10980	4.1	6105	2.3	2085	5.2	10080	2.4	2260	7.2	20190	4.5	7260	11.5	49320
13,	6.4	15755	3.9	5580	5.1	9635	10.3	40730	5.4	10980	3.8	5335	2.2	1920	4.8	8375	2.5	2445	6.9	18410	4.6	7600	10.1	39310
14,	5.7	12370	4.0	5840	4 8	8375	9.5	35100	5.3	10535	3.6	4850	2.1	1755	3.9	5580	2.4	2260	6.8	17840	5.1	9635	8.9	31025
15,	5.7	12370	4.0	5840	4.7	7985	9.9	37990	5.4	10980	3.3	4165	2.0	1605	3.5	4620	2.9	3270	6.8	17840	5.2	10080	8.3	27100
16,	5.5	11440	4.1	6105	4 6	7600	9.7	36500	5.4	10980	3.1	3715	1.9	1465	3.2	3940	2.3	2085	6.9	18410	5.2	10080	12.0	53000
17,	6.1	14285	4.1	6105	4.4	6955	9.3	33725	5.3	10535	3.0	3490	2.2	1920	2.9	3270	2.1	1755	6.1	14285	5.1	9635	11.9	52260
18,	7.3	20790	4.1	6105	4.3	6660	8.8	30350	5.4	10980	3.3	4165	2.4	2260	2.5	2445	2.1	1755	6.7	17290	5.4	10980	11.9	52260
19,	7.7	23275	4.1	6105	4.1	6105	7.9	24525	5.3	10535	3.2	3940	2.4	2260	8.0	25150	2.0	1605	5.1	9635	8.6	29050	9.2	33050
20,	7.5	22025	4.1	6105	3.8	5335	7.2	20190	5.3	10535	3.2	3940	2.4	2260	7.0	19000	2.4	2260	5.7	12370	9.4	34400	8.2	26450
21,	8.0	25150	4.2	6380	4.0	5840	6.9	18410	a 5.0	9200	3.3	4165	2.2	1920	5.2	10080	2.7	2850	5.8	12840	9.8	37200	7.2	20190
22,	9.65	36150	4.4	6955	4.1	6105	6.5	16250	a 4.7	7985	3.4	4390	2.1	1755	4.8	8375	3.0	3490	6.1	14285	10.1	39310	6.8	17840
23	12.2	54510	4.6	7600	4.0	5840	6.3	15260	4.4	6955	3.3	4165	2.4	2260	4.2	6380	3.0	3490	6.7	17290	9.5	35100	6.3	15260
24,	13.0	60800	4.7	7985	4.0	5840	6.0	13800	a 4.25	6520	3.1	3715	2.5	2445	4.8	8375	2.8	3060	5.2	10080	8.6	29050	5.6	11900
25,	12.3	55280	5.4	10980	3.9	5580	5.7	12370	4.1	6105	2.9	3270	2.3	2085	4.2	6380	2.8	3060	5.0	9200	7.5	22025	5.7	12370
26,	11.2	47140	5.8	12840	4.1	6105	5.6	11900	4.0	5840	2.9	3270	2.0	1605	3.8	5335	2.9	3270	5.8	12840	6.8	17840	5.1	9635
27,	9.6	35800	5.2	10080	6.6	16760	5.4	10980	4.6	7600	2.8	3060	1.9	1465	3.6	4850	2.3	2085	6.8	17840	6.3	15260	5.3	10535
28,	8.3	27100	4.9	8775	13.8	67390	5.5	11440	4.7	7985	2.7	2850	2.3	2085	3.3	4165	2.4	2260	6.8	17840	6.0	13800	6.5	16250
29,	7.5	22025	------	------	14.0	69100	5.3	10535	4.8	8375	2.8	3060	2.2	1920	3.1	3715	2.5	2445	6.9	18410	5.2	10080	5.9	13315
30,	6.0	13800	------	------	12.6	57630	4.9	8775	4.9	8775	2.7	2850	2.2	1920	2.9	3270	2.5	2445	7.5	22025	5.7	12370	5.5	11440
31,	6.5	16250	------	------	13.6	65700	------	------	5.0	9200	------	------	2.1	1755	2.7	2850	------	------	7.9	24525	------	------	7.4	21400

a Interpolated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ALLEGHENY RIVER, AT KITTANNING, ARMSTRONG COUNTY, PA.

1907. Day.	JAN. G H	JAN. Dis.	FEB. G H	FEB. Dis.	MAR. G H	MAR. Dis.	APR. G H	APR. Dis.	MAY. G H	MAY. Dis.	JUNE. G H	JUNE. Dis.	JULY. G H	JULY. Dis.	AUG. G H	AUG. Dis.	SEPT. G H	SEPT. Dis.	OCT. G H	OCT. Dis.	NOV. G H	NOV. Dis.	DEC. G H	DEC. Dis.
1,	8.4	27750	5.1	9635	4.2	6380	9.4	34400	8.0	25150	5.9	13315	4.7	7985	2.8	3060	1.7	1220	3.2	3940	5.2	10080	4.1	6105
2,	10.5	42150	5.2	10080	4.6	7600	8.3	27100	7.5	22025	6.0	13800	6.9	18410	2.8	3060	1.9	1465	3.2	3940	4.9	8775	4.8	8375
3,	9.6	35800	5.4	10980	5.8	12840	7.6	22650	7.2	20190	7.5	22025	7.0	19000	4.6	7600	2.4	2260	3.2	3940	6.1	14285	4.6	7600
4,	9.5	35100	5.6	11900	6.0	13800	6.9	18410	7.8	23900	8.3	27100	6.3	15260	4.0	5840	2.0	1605	4.2	6380	9.8	37200	4.1	6105
5,	12.9	60000	5.0	9200	6.1	14285	6.7	17290	8.5	28400	7.9	24525	5.6	11900	2.4	2260	2.2	1920	7.35	21095	9.3	33725	4.2	6380
6,	12.4	56060	5.1	9635	6.8	17840	6.7	17290	9.0	31700	8.8	30350	5.2	10080	3.2	3940	2.0	1605	6.6	16760	9.3	33725	4.0	5840
7,	11.2	47140	4.8	8375	5.6	11900	6.6	16760	8.7	29700	9.9	37900	4.6	7600	2.8	3060	1.9	1465	6.7	17290	8.9	31025	3.9	5580
8,	10.9	44990	4.5	7260	5.2	10080	6.4	15755	8.0	25150	9.3	33725	4.4	6955	2.7	2850	1.8	1340	6.8	17840	8.2	26450	3.7	5080
9,	13.7	66540	4.3	6660	4.8	8375	6.2	14770	8.6	29050	8.0	25150	4.0	5840	2.6	2640	2.0	1605	5.8	12840	8.6	29050	4.6	7600
10,	12.8	59210	4.4	6955	4.7	7985	6.3	15260	8.1	25800	6.9	18410	3.8	5335	2.4	2260	2.0	1605	6.9	18410	8.4	27750	5.2	10080
11,	11.3	47860	4.7	7985	4.6	7600	6.1	14285	7.3	20790	6.3	15260	3.7	5080	2.3	2085	3.0	3490	6.9	18410	8.3	27100	6.0	13800
12,	10.3	40730	4.5	7260	4.7	7985	5.9	13315	6.8	17840	7.0	19000	3.7	5080	2.3	2085	4.0	5840	5.5	11440	8.1	25800	7.1	19590
13,	10.0	38600	4.8	8375	8.6	29050	5.9	13315	6.3	15260	6.4	15755	3.8	5335	2.0	1605	3.8	5335	5.0	9200	7.8	23900	8.0	25150
14,	9.7	36500	4.3	6660	14.0	69100	5.6	11900	6.2	14770	7.9	24525	6.0	13800	2.1	1755	3.5	4620	5.6	11900	7.6	22650	6.6	16760
15,	10.9	44990	4.2	6380	15.9	86100	6.2	14770	5.6	11900	7.5	22025	5.3	10535	1.8	1340	2.9	3270	6.2	14770	7.5	22025	6.4	15755
16,	10.1	39310	5.0	9200	14.2	70840	5.9	13315	5.9	13315	6.6	16760	4.5	7260	1.8	1340	2.7	2850	5.9	13315	7.4	21400	6.1	14285
17,	9.2	33050	4.5	7260	13.0	60800	5.7	12370	7.3	20790	5.8	12840	3.9	5580	2.0	1605	2.7	2850	5.3	10535	7.0	19000	6.1	14285
18,	8.1	25800	4.6	7600	13.1	61600	5.6	11900	7.2	20190	5.3	10535	4.4	6955	1.8	1340	3.3	4165	4.7	7985	6.6	16760	6.0	13800
19,	9.4	34400	4.6	7600	12.7	58420	5.5	11440	6.6	16760	4.8	8375	4.3	6660	1.9	1465	3.9	5580	4.2	6380	6.2	14770	5.9	13315
20,	13.5	64870	5.1	9635	13.8	67390	5.3	10535	6.4	15755	4.6	7600	3.9	5580	1.8	1340	3.6	4850	3.9	5580	5.8	12840	5.8	12840
21,	13.6	65700	5.5	11440	13.3	63220	5.2	10080	7.2	20190	4.5	7260	3.5	4620	1.7	1220	3.5	4620	3.6	4850	5.4	10980	4.5	7260
22,	12.7	58420	5.5	11440	11.8	51520	5.0	9200	6.8	17840	4.6	7600	3.0	3490	1.7	1220	3.6	4850	3.7	5080	5.1	9635	4.7	7985
23,	10.3	40730	5.6	11900	10.6	42860	4.8	8375	6.3	15260	4.8	8375	3.0	3490	1.8	1340	3.4	4390	3.8	5335	4.7	7985	5.7	12370
24,	8.1	25800	5.0	9200	10.8	44280	6.2	14770	5.9	13315	4.6	7600	3.0	3490	1.8	1340	3.1	3715	3.7	5080	4.5	7260	15.0	77900
25,	7.0	19000	4.6	7600	10.3	40730	9.5	35100	5.6	11900	5.0	9200	3.2	3940	1.7	1220	2.8	3060	3.7	5080	4.4	6955	15.3	80600
26,	6.5	16250	4.0	5840	9.4	34400	9.9	37900	5.4	10980	5.6	11900	3.1	3715	1.9	1465	2.5	2445	3.5	4620	4.2	6380	13.2	62410
27,	6.7	17290	4.4	6955	10.4	41440	12.0	53000	5.9	13315	5.4	10980	4.2	6380	1.9	1465	2.3	2085	3.5	4390	4.1	6105	11.6	50050
28,	5.9	13315	4.2	6380	12.8	59210	10.9	44990	10.0	38600	5.3	10535	3.7	5080	1.8	1340	2.3	2085	4.4	6955	4.3	6660	10.2	40020
29,	5.6	11900	-----	-----	13.5	64870	9.6	35800	9.1	32375	4.8	8375	3.4	4390	1.5	900	2.8	3060	5.9	13315	4.5	7260	11.4	48590
30,	5.6	11900	-----	-----	12.5	56840	8.5	28400	7.7	23275	4.6	7600	3.3	4165	1.8	1340	3.3	4165	6.4	15755	4.9	8775	11.2	47140
31,	5.3	10535	-----	-----	10.8	44280	-----	-----	6.6	16760	-----	-----	3.0	3490	1.6	1100	-----	-----	5.9	13315	-----	-----	11.1	46420

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ALLEGHENY RIVER, AT KITTANNING, ARMSTRONG COUNTY, PA.

1908. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	10.4	41440	5.0	9200	5.4	10980	10.9	44990	7.4	21400	8.3	27100	3.7	5080	3.5	4620	1.77	1305	1.57	1065	1.57	1065	1.77	1305
2,	9.8	37200	5.0	9200	12.5	56840	9.0	31700	8.4	27750	7.9	24525	3.6	4850	3.2	3940	1.67	1185	1.67	1185	1.57	1065	1.77	1305
3,	8.4	27750	5.0	9200	14.7	75270	8.6	29050	10.2	40020	7.1	19590	3.9	5580	3.0	3490	1.57	1065	1.67	1185	1.57	1065	1.87	1430
4,	7.6	22650	5.0	9200	12.1	53750	8.2	26450	10.8	44280	6.6	16760	3.7	5080	3.0	3490	1.57	1065	1.67	1185	1.47	955	1.87	1430
5,	7.1	19590	5.0	9200	11.4	48590	7.8	23900	11.0	45700	6.0	13800	6.9	18410	2.8	3060	1.47	955	1.57	1065	1.47	955	1.87	1430
6,	6.8	17840	5.0	9200	12.9	60000	7.3	20790	11.0	45700	5.3	10535	5.0	9200	2.6	2640	1.37	850	1.57	1065	1.37	850	1.87	1430
7,	6.2	14770	5.0	9200	16.4	90800	7.6	22650	11.2	47140	5.2	10080	4.5	7260	3.0	3490	1.47	955	1.57	1065	1.37	850	1.87	1430
8,	5.3	10535	5.0	9200	14.9	77080	8.6	29050	13.1	61600	5.0	9200	4.2	6380	3.3	4165	1.57	1065	1.47	955	1.37	850	1.87	1430
9,	5.3	10535	5.0	9200	13.5	64870	9.6	35800	12.6	57630	4.9	8775	3.8	5335	3.3	4165	1.67	1185	1.47	955	1.47	955	1.87	1430
10,	5.2	10080	5.0	9200	11.8	51520	10.2	40020	11.0	45700	5.2	10080	3.3	4165	3.3	4165	1.77	1305	1.47	955	1.47	955	1.87	1430
11,	4.1	6105	5.0	9200	9.8	37200	9.6	35800	10.3	40730	4.8	8375	3.4	4390	3.3	4165	1.67	1185	1.47	955	1.57	1065	2.0	1605
12,	6.3	15260	a 5.0	9200	10.4	41440	8.5	28400	9.3	33725	4.8	8375	3.6	4850	3.0	3490	1.67	1185	1.47	955	1.57	1065	2.0	1605
13,	7.2	20190	a 5.0	9200	12.9	60000	8.2	26450	8.8	30350	4.6	7600	3.6	4850	2.9	3270	1.57	1065	1.47	955	1.67	1185	2.0	1605
14,	10.9	44990	5.0	9200	14.5	73490	8.0	25150	7.9	24525	4.6	7600	3.5	4620	2.6	2640	1.57	1065	1.47	955	1.77	1305	2.1	1755
15,	9.6	35800	18.9	116500	15.4	81500	8.1	25800	7.1	19590	4.4	6955	3.7	5080	2.2	1920	1.47	955	1.37	850	1.67	1185	2.1	1755
16,	8.5	28400	24.3	180600	16.8	94600	8.4	27750	8.5	28400	4.2	6380	3.7	5080	2.1	1755	1.47	955	1.47	955	1.57	1065	2.2	1920
17,	7.5	22025	18.7	114300	16.5	91700	8.2	26450	12.1	53750	4.2	6380	4.6	7600	2.0	1605	1.47	955	1.47	955	1.67	1185	2.4	2260
18,	6.8	17840	15.4	81500	16.9	95600	8.0	25150	10.55	42505	4.0	5840	5.2	10080	2.0	1605	1.47	955	1.47	955	1.67	1185	4.9	8775
19,	6.4	15755	12.8	59210	18.7	114300	8.6	29050	10.6	42860	3.8	5335	5.3	10535	2.3	2085	1.47	955	1.47	955	1.67	1185	6.4	15755
20,	6.0	13800	10.9	44990	17.6	102600	9.9	37900	12.1	53750	3.6	4850	5.4	10980	2.6	2640	1.37	850	1.47	955	1.67	1185	6.5	16250
21,	5.8	12840	9.8	37200	13.9	68240	10.4	41440	11.2	47140	3.4	4390	5.2	10080	2.7	2850	1.37	850	1.37	850	1.77	1305	5.0	9200
22,	5.6	11900	8.3	27100	11.2	47140	9.1	32375	10.1	39310	3.5	4620	4.9	8775	3.1	3715	1.37	850	1.37	850	1.77	1305	4.1	6105
23,	6.0	13800	7.5	22025	10.4	41440	8.5	28400	9.6	35800	3.8	5335	6.8	17840	2.7	2850	1.37	850	1.37	850	1.77	1305	3.6	4850
24,	6.3	15260	6.7	17290	9.3	33725	8.0	25150	8.3	27100	4.2	6380	8.1	25800	2.3	2085	1.37	850	1.37	850	1.87	1430	3.2	3940
25,	6.1	14285	6.3	15260	9.1	32375	7.8	23900	7.6	22650	4.8	8375	7.9	24525	2.2	1920	1.37	850	1.37	850	1.87	1430	3.8	5335
26,	5.8	12840	6.5	16250	8.8	30350	7.1	19590	7.3	20790	5.2	10080	6.1	14285	2.2	1920	1.37	850	1.47	955	1.87	1430	4.1	6105
27,	5.6	11900	6.3	15260	8.6	29050	6.6	16760	7.1	19590	4.9	8775	5.5	11440	2.0	1605	1.37	850	1.47	955	1.97	1565	4.0	5840
28,	7.7	23275	5.8	12840	9.5	35100	6.4	15755	10.2	40020	4.6	7600	5.0	9200	2.0	1605	1.37	850	1.47	955	1.97	1565	3.9	5580
29,	6.8	17840	5.2	10080	10.9	44990	6.9	18410	8.7	29700	4.2	6380	4.8	8375	1.87	1430	1.47	955	1.47	955	1.87	1430	4.1	6105
30,	5.9	13315	------	------	10.9	44990	7.6	22650	9.1	32375	3.9	5580	4.4	6955	1.77	1305	1.57	1065	1.47	955	1.77	1305	4.3	6660
31,	5.1	9635	------	------	10.8	44280	------	------	8.7	29700	------	------	3.9	5580	1.77	1305	------	------	1.57	1065	------	------	4.7	7985

a Interpolated. **Feb. 1 to 14 inclusive, ice conditions. Assume gage height 5.0 feet; discharge=9200 sec.-ft.**

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ALLEGHENY RIVER, AT KITTANNING, ARMSTRONG COUNTY, PA.

1909.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.9	8775	5.8	12840	9.9	37900	7.5	22025	‡22.8	162000	4.6	7600	4.6	7600	2.4	2260	1.8	1340	1.4	880	2.27	2035	3.02	3535
2,	5.2	10080	5.0	9200	9.5	35100	7.2	20190	20.85	138000	4.4	6955	4.2	6380	2.2	1920	1.7	1220	1.5	990	2.18	1885	2.80	3060
3,	6.7	17290	4.2	6380	8.9	31025	7.1	19590	18.15	108000	4.2	6380	3.7	5080	2.0	1605	1.7	1220	1.5	990	2.14	1820	2.71	2870
4,	9.5	35100	4.6	7600	9.4	34400	7.0	19000	16.9	95600	4.0	5840	3.3	4165	1.9	1465	1.6	1100	1.5	990	2.10	1755	2.63	2705
5,	11.4	48590	6.2	14770	8.9	31025	7.0	19000	14.3	71720	4.2	6380	3.2	3940	1.8	1340	1.6	1100	1.6	1100	2.08	1725	2.52	2485
6,	13.5	64870	8.3	27100	7.7	23275	7.1	19590	11.7	50780	6.0	13800	3.2	3940	1.7	1220	1.5	990	1.7	1220	2.02	1635	2.42	2295
7,	13.1	61600	10.7	43570	7.3	20790	8.7	29700	10.3	40730	6.5	16250	3.1	3715	1.6	1100	1.5	990	1.8	1340	1.95	1535	2.40	2260
8,	10.3	40730	10.8	44280	7.6	22650	8.6	29050	9.5	35100	7.1	19590	3.1	3715	1.7	1220	1.5	990	1.7	1220	2.04	1665	2.38	2225
9,	8.2	26450	9.7	36500	8.1	25800	8.1	25800	8.0	25150	7.1	19590	3.0	3490	1.5	990	1.5	990	1.6	1100	2.10	1755	2.30	2085
10,	7.7	23275	8.6	29050	10.3	40730	7.9	24525	7.9	24525	7.2	20190	3.1	3715	1.6	1100	1.4	880	1.5	990	2.18	1885	2.05	1680
11,	7.3	20790	8.1	25800	11.7	50780	7.6	22650	7.6	22650	7.1	19590	3.0	3490	1.5	990	1.4	880	1.5	990	2.24	1985	1.75	1280
12,	6.1	14285	7.7	23275	10.7	43570	7.5	22025	7.5	20790	7.2	20190	2.8	3060	1.6	1100	1.4	880	1.6	1100	2.50	2445	1.95	1535
13,	5.7	12370	7.6	22650	10.3	40730	7.6	22650	6.8	17840	7.2	20190	2.6	2640	1.5	990	1.3	775	1.7	1220	2.43	2315	2.35	2170
14,	5.3	10535	8.4	27750	9.2	33050	8.9	31025	6.6	16760	6.9	18410	2.5	2445	1.4	880	1.3	775	2.0	1605	2.35	2170	2.98	3445
15,	5.3	10535	12.2	54510	8.3	27100	9.9	37900	6.5	16250	6.5	16250	2.3	2085	1.5	990	1.4	880	2.3	2085	2.26	2020	4.54	7395
16,	5.5	11440	*17.05	97100	7.7	23275	10.9	44990	6.9	18410	5.9	13315	2.2	1920	2.3	2085	1.5	990	2.52	2485	2.20	1920	4.92	8800
17	5.8	12840	15.95	86500	7.1	19590	9.2	33050	7.5	22025	5.3	10535	2.4	2260	2.7	2850	1.4	880	2.32	2120	2.28	2050	5.12	9725
18,	5.5	11440	12.5	56840	6.8	17840	8.4	27750	7.2	20190	4.8	8375	2.7	2850	2.4	2260	1.4	880	2.10	1755	2.32	2120	5.32	10625
19,	5.2	10080	10.5	42150	6.4	15755	7.7	23275	7.0	19000	4.4	6955	2.6	2640	2.2	1920	1.3	775	1.95	1535	2.54	2525	5.65	12135
20,	5.0	9200	10.4	41440	6.3	15260	7.6	22650	6.6	16760	4.9	8775	2.6	2640	2.2	1920	1.3	775	2.05	1680	2.62	2680	5.70	12370
21,	4.6	7600	11.9	52200	6.2	14770	7.6	22650	6.0	13800	4.3	6660	2.5	2445	2.1	1755	1.4	880	2.11	1770	2.90	3270	§5.75	12605
22,	6.3	15260	11.3	47860	5.8	12840	7.9	24525	5.6	11900	3.7	5080	2.5	2445	1.8	1340	1.5	990	2.31	2100	3.30	4165	5.63	12040
23,	8.1	25800	9.9	37900	5.6	11900	8.1	25800	5.2	10080	4.5	7260	2.5	2445	1.8	1340	1.4	880	2.22	1955	3.95	5710	5.45	11205
24,	13.7	66540	10.1	39310	6.3	15260	8.2	26450	5.0	9200	4.9	8775	2.6	2640	1.7	1220	1.4	880	2.20	1920	5.02	9285	5.10	9635
25,	15.0	77900	12.85	59605	7.6	22650	7.2	20190	4.7	7985	5.3	10535	2.6	2640	1.6	1100	1.3	775	2.84	3145	5.32	10625	5.06	9460
26,	12.3	55280	14.35	72160	8.5	28400	6.8	17840	4.4	6955	5.1	9635	2.7	2850	1.6	1100	1.3	775	3.02	3535	4.71	8025	5.04	9375
27,	10.8	44280	13.1	61600	10.4	41440	6.3	15260	4.3	6660	5.3	10535	2.6	2640	1.6	1100	1.4	880	3.15	3825	4.13	6185	5.08	9545
28,	8.7	29700	11.4	48590	9.9	37900	6.2	14770	4.5	7260	6.2	14770	2.6	2640	1.6	1100	1.4	880	3.06	3625	3.65	4965	5.20	10080
29,	7.9	24525	-----	-----	9.4	34400	6.15	14525	4.8	8375	5.7	12370	2.6	2640	1.7	1220	1.4	880	2.95	3380	3.44	4480	5.05	9420
30,	7.2	20190	-----	-----	8.7	29700	†21.3	144000	4.8	8375	5.1	9635	2.6	2640	1.7	1220	1.4	880	3.01	3510	3.10	3715	4.84	8535
31,	6.4	15755	-----	-----	8.1	25800	-----	-----	4.7	7985	-----	-----	2.5	2445	1.8	1340	-----	-----	2.60	2640	-----	-----	4.66	7830

*Maximum 17.8 feet at 6.00 P. M. 104,700 sec. ft.
†Maximum 23.9 feet at 11.00 P. M. 176,000 sec. ft.
‡Maximum 23.7 feet at 1.30 A. M. 173,000 sec. ft.
§River frozen from Dec. 21 to 31, inclusive.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ALLEGHENY RIVER, AT KITTANNING, ARMSTRONG COUNTY, PA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1	4.55	7430	6.78	17730	19.95	128000	6.83	18011	8.26	26840	4.96	9030	2.36	2190	1.83	1378	1.68	1196	2.95	3380	5.48	11340	8.30	27100
2,	4.48	7199	6.12	14382	20.70	137000	6.42	15854	8.12	25930	5.04	9374	2.32	2120	1.85	1402	2.04	1665	2.62	2682	6.22	14868	7.60	22650
3,	5.46	11250	6.24	14966	20.70	137000	6.23	14917	8.12	25930	5.36	10802	2.29	2068	1.86	1414	2.86	3186	2.68	2808	6.74	17510	7.03	19177
4,	5.65	12135	6.18	14673	20.35	133000	6.01	13848	8.10	25800	5.68	12276	2.25	2002	1.80	1340	4.78	8297	3.02	3535	6.82	17954	6.52	16352
5,	6.00	13800	6.12	14382	19.86	127000	5.81	12890	8.04	25412	6.02	13897	2.21	1936	1.72	1244	4.68	7908	3.50	4620	6.75	17565	6.20	14770
6,	6.80	17840	6.12	14382	20.45	134000	6.00	13800	7.92	24650	5.98	13703	2.16	1854	1.62	1124	3.51	4643	3.50	4620	5.62	11994	6.10	14285
7,	6.76	17620	6.02	13897	‡20.70	137000	6.23	14917	7.81	23962	5.92	13412	2.24	1986	1.60	1100	3.12	3760	3.52	4666	6.21	14819	5.60	11900
8,	6.63	16919	5.81	12888	17.92	106000	5.88	13220	7.76	23650	5.62	11994	2.20	1920	1.60	1100	3.10	3715	3.71	5104	6.82	17954	5.25	10302
9,	6.58	16658	6.14	14479	16.42	91000	5.21	10124	7.34	21034	5.21	10124	2.18	1887	1.60	1100	3.22	3985	3.80	5335	6.90	18410	5.00	9200
10,	6.55	16505	6.22	14868	13.76	67050	4.42	7016	7.18	20070	5.15	9858	2.17	1870	1.60	1100	3.35	4277	3.85	5457	7.00	19000	4.80	8375
11,	6.24	14965	6.18	14673	12.22	54664	4.40	6955	6.09	14236	5.02	9287	2.10	1755	1.65	1160	3.46	4528	3.79	5311	7.12	19710	4.20	6380
12	5.95	13558	6.05	14042	10.90	44990	4.36	6837	5.48	11340	4.82	8455	2.20	1920	1.74	1268	3.58	4804	3.54	4712	8.40	27750	4.40	6955
13,	6.00	13800	5.86	13125	10.00	38600	4.30	6660	5.10	9902	4.68	7908	2.22	1953	1.85	1402	3.31	4187	3.26	4075	8.80	30350	4.72	8063
14,	5.45	11205	5.52	11532	10.00	38600	4.25	6520	4.83	8495	4.51	7294	2.10	1755	2.00	1605	3.04	3580	3.02	3535	8.22	26580	4.66	7831
15,	5.51	11486	5.50	11440	9.04	31970	4.16	6270	4.60	7600	4.22	6436	2.24	1986	1.91	1478	2.77	2997	2.72	2892	7.87	24338	4.60	7600
16,	5.75	12605	5.32	10624	8.51	28465	4.08	6052	4.48	7199	4.10	6105	2.51	2465	1.85	1402	2.38	2225	2.20	1920	7.45	21712	4.00	5840
17,	6.05	14043	5.51	11486	8.00	25150	4.25	6520	4.39	6926	3.96	5736	2.88	3228	1.75	1280	2.22	1953	2.41	2278	6.82	17954	3.65	4965
18,	10.80	44280	5.62	11994	7.82	24025	4.20	6380	4.42	7016	3.91	5606	2.92	3314	1.71	1232	2.19	1904	2.48	2408	6.40	15755	3.40	4390
19,	*14.32	71896	5.80	12840	7.88	24400	5.12	9724	4.48	7199	3.74	5178	2.86	3186	1.65	1160	2.08	1725	2.44	2334	6.20	14770	3.86	5482
20,	13.06	61280	6.10	14285	8.12	25930	5.40	10980	4.50	7260	3.62	4896	2.64	2724	1.64	1148	1.98	1577	2.50	2445	5.98	13706	4.55	7430
21,	13.02	60960	6.32	15359	8.88	30890	6.32	15359	4.58	7532	3.44	4482	2.48	2408	1.59	1089	1.91	1479	2.56	2562	6.00	13800	4.80	8375
22,	13.42	64206	6.46	16052	11.11	46492	7.32	20912	5.12	9724	3.26	4075	2.32	2120	1.52	1012	1.94	1521	2.48	2408	6.20	14770	5.10	9635
23,	10.11	39381	6.64	16972	10.92	45132	7.15	19890	5.26	10347	3.02	3535	2.20	1920	1.48	968	2.08	1725	2.40	2260	6.40	15755	5.60	11900
24,	10.08	39168	6.82	17954	10.62	43002	7.02	19118	5.35	10758	2.90	3270	2.15	1837	1.56	1056	3.12	3760	2.61	2661	6.60	16760	6.00	13800
25,	9.46	34820	7.04	19236	10.52	42292	9.24	33320	5.35	10758	2.67	2787	2.12	1788	1.92	1493	6.00	13800	2.82	3102	7.90	24525	6.50	16250
26,	8.76	30090	7.10	19590	10.60	42860	12.48	56684	5.28	10436	2.58	2601	2.08	1725	2.00	1605	5.36	10800	2.96	3402	9.03	31902	6.30	15260
27,	8.12	25930	7.30	20790	9.72	36640	12.25	54895	5.24	10258	2.56	2562	1.98	1577	2.10	1755	4.72	8063	3.03	3556	9.00	31700	5.80	12840
28	8.72	29830	†16.72	93800	8.73	29895	11.64	50342	5.18	9991	2.60	2640	1.90	1465	2.11	1771	4.12	6160	3.73	5154	8.30	27100	5.80	12840
29,	7.96	24900	------	------	8.15	26125	9.96	38320	5.12	9724	2.51	2464	1.85	1402	1.93	1507	3.70	5080	4.02	5893	7.85	24212	6.00	13800
30,	7.51	22088	------	------	7.15	19890	8.82	30485	5.12	9724	2.43	2316	1.85	1402	1.77	1304	3.32	4210	4.60	7600	8.40	27750	§14.75	75720
31,	7.12	19710	------	------	7.21	20250	------	------	5.10	9635	------	------	1.81	1352	1.73	1256	------	------	5.20	10080	------	------	13.60	65700

*Maximum 15.6 feet at 3.15 P. M. 83,300 sec. ft.
†Maximum 19.30 feet at 9.00 P. M. 121,000 sec. ft.
‡Maximum 21.6 feet. 147 000 sec. ft.
§Maximum 15.0 feet. 77,900 sec. ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF ALLEGHENY RIVER, AT KITTANNING, ARMSTRONG COUNTY, PA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	11.55	49685	10.50	42150	6.30	15260	8.62	29180	6.83	18011	3.80	5335	4.00	5840	1.55	1045	7.85	24212	11.05	46060	4.95	8988	8.85	30688
2,	11.32	48006	9.50	35100	5.50	11440	7.81	23962	7.10	19590	3.78	5276	3.60	4850	1.50	990	7.00	19000	18.92	116500	5.70	12370	8.25	26775
3,	12.50	56840	8.52	28530	5.23	10216	7.40	21400	7.21	20250	3.75	5202	3.35	4278	1.85	1402	6.15	14528	14.40	72600	8.40	27750	7.65	22962
4,	14.30	71720	8.30	27100	4.62	7677	7.10	19590	7.51	22088	3.70	5080	3.00	3490	1.95	1535	5.10	9635	11.05	46060	8.60	29050	7.20	20190
5,	12.55	57235	7.90	24525	4.12	6160	6.30	15260	6.75	17565	3.55	4735	2.40	2260	1.90	1465	4.45	7108	9.55	35450	8.40	27750	6.80	17840
6,	10.80	44280	7.20	20190	3.92	5632	8.90	31025	6.35	15508	3.60	4850	2.10	1755	2.50	2445	7.10	19590	8.60	29050	8.10	25800	6.45	16002
7,	9.95	38250	6.50	16250	3.89	5555	10.93	45203	6.00	13800	3.60	4850	2.00	1605	2.85	3165	8.48	28270	8.40	27750	7.75	23588	6.15	14528
8,	8.55	28725	5.83	12982	3.46	4528	11.23	47356	5.46	11256	3.55	4735	2.00	1605	2.90	3270	7.90	24525	9.80	37200	7.45	21712	5.85	13078
9,	8.10	25800	5.80	12840	3.17	3872	10.95	45345	5.20	10080	3.55	4735	1.95	1535	2.65	2745	8.85	30688	9.05	32038	7.05	19295	5.85	13078
10,	7.50	22025	5.73	12511	3.01	3512	10.50	42150	4.92	8860	3.40	4390	1.85	1402	2.30	2085	10.05	38955	8.25	26775	6.75	17515	6.25	15015
11,	7.00	19000	5.85	13078	3.87	5506	8.72	29830	4.82	8455	3.50	4620	1.95	1535	2.25	2002	8.53	28595	7.45	21712	6.55	16505	7.75	23588
12,	8.77	30155	5.30	10535	4.62	7677	8.35	27425	4.80	8375	3.75	5202	1.95	1535	2.10	1755	7.20	20190	6.80	17840	7.40	21400	9.10	32375
13,	13.30	63220	5.30	10535	5.28	10444	7.99	25088	4.75	8180	4.50	7260	1.93	1507	1.95	1535	6.43	15904	6.30	15260	7.50	22025	10.65	43215
14,	15.79	85100	5.50	11440	9.24	20430	7.24	20430	4.68	7908	4.95	8988	1.93	1507	1.80	1340	5.85	13078	5.95	13558	7.50	22025	12.05	53375
15,	*19.20	120000	9.00	31700	8.50	28400	8.76	30090	4.50	7260	4.80	8375	1.82	1365	1.60	1100	12.27	55049	6.05	14042	7.25	20490	13.05	61200
16,	16.64	93000	9.80	37200	8.24	26710	8.85	30688	4.52	7328	4.80	8375	1.92	1493	2.60	2640	14.20	70840	5.85	13078	6.95	18705	13.07	61360
17,	13.19	62329	9.30	33725	7.92	24650	8.85	30688	4.45	7108	4.60	7600	1.92	1493	3.25	4052	11.75	51150	5.60	11900	6.80	17840	12.10	53750
18,	11.30	47860	10.72	43712	7.28	20670	8.15	26125	4.00	5840	4.15	6242	1.90	1465	3.50	4620	10.17	39807	9.75	36850	7.55	22338	10.85	44635
19,	9.62	35940	13.85	67815	7.48	21900	8.07	25605	4.32	6719	3.90	5580	1.90	1465	3.30	4165	8.20	26450	11.10	46420	13.85	67815	9.40	34400
20,	8.42	27880	12.60	57630	7.12	19710	7.70	23275	4.18	6325	3.60	4850	1.77	1304	2.85	3165	6.65	17025	9.55	35450	11.65	50415	7.75	23588
21,	7.80	23900	10.53	42363	7.28	20670	10.32	40872	4.25	6520	3.20	3940	1.85	1402	2.70	2850	5.95	13558	8.30	27100	10.30	40730	7.35	21095
22,	7.00	19000	9.00	31700	7.31	20851	9.82	37340	4.20	6380	2.90	3270	1.85	1402	2.50	2445	5.40	10980	7.40	21400	9.50	35100	7.55	22338
23,	6.80	17840	7.95	24838	8.89	30958	10.05	38955	4.16	6270	2.55	2542	1.85	1402	2.25	2002	5.00	9200	6.55	16505	8.70	29700	7.65	22962
24,	6.50	16250	7.10	19590	8.10	25800	9.42	34540	4.12	6160	2.70	2850	1.90	1465	2.20	1920	4.60	7600	6.30	15260	7.90	24525	8.20	26450
25,	5.80	12840	6.90	18410	7.81	23962	8.70	29700	4.00	5840	3.60	4850	1.75	1280	2.20	1920	4.25	6520	5.95	13558	7.05	19295	8.00	25150
26,	5.50	11440	6.70	17290	7.45	21712	7.82	24025	4.06	5999	3.90	5580	1.85	1402	3.70	5080	4.05	5972	5.75	12605	7.00	19000	7.55	22338
27,	5.80	12840	7.20	20190	8.21	26515	7.25	20490	4.02	5893	4.10	6105	1.80	1340	3.50	4620	4.00	5840	5.50	11440	7.20	20190	7.55	22338
28,	11.55	49685	6.40	15755	9.85	37550	6.80	17840	4.00	5840	4.25	6520	1.75	1280	5.10	9635	4.55	7430	5.20	10080	7.55	22338	7.85	24212
29,	16.3	90000	-----	------	11.00	45700	6.49	16200	3.95	5710	4.25	6520	1.75	1280	8.80	30350	6.40	15755	5.00	9200	7.85	24212	7.78	23775
30,	14.40	72600	-----	------	10.01	38671	6.57	16607	3.80	5335	4.10	6105	1.60	1100	13.80	67390	7.45	21712	4.65	7792	9.65	36150	7.05	19295
31,	12.50	56840	-----	------	9.35	34062	-----	-----	3.85	5458	-----	------	1.65	1160	9.45	34750	-----	------	4.60	7600	-----	------	9.45	34750

*19.65 feet at 12.30 P. M. 125,000 sec. ft.

ESTIMATED MONTHLY DISCHARGE OF ALLEGHENY RIVER, AT KITTANNING, ARMSTRONG COUNTY.

(Drainage area 9,010 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1904.					
August,	7260	3715	----------	----------	----------
September,	7000	1605	3042	0.338	0.377
October,	13800	2640	6006	0.667	0.769
November,	5335	2085	2984	0.331	0.369
December,	50060	2085	10586	1.175	1.354
a 1905.					
January,	87900	14285	44910	4.984	5.745
February,	37200	25800	----------	----------	----------
March,	240250	34400	----------	----------	----------
April,	42860	9635	18769	2.083	2.324
May,	20190	5580	----------	----------	----------
June,	38600	4165	14018	1.556	1.736
July,	48590	3715	16653	1.848	2.131
August,	22960	3940	8688	0.964	1.111
September,	21400	2445	6215	0.690	0.770
October,	35100	3060	11216	1.245	1.435
November,	53000	7260	14740	1.636	1.826
December,	77080	6600	29373	3.260	3.758
The year,	240250	2445	----------	----------	----------
1906.					
January,	60890	10980	27034	3.000	3.459
February,	15260	5580	7658	0.850	0.885
March,	69100	5335	16694	1.853	2.136
April,	62410	8775	30312	3.364	3.753
May,	19590	5840	10416	1.156	1.333
June,	33725	2850	6637	0.737	0.822
July,	2445	1465	2035	0.226	0.261
August,	25150	1605	6133	0.681	0.785
September,	4850	1605	2900	0.322	0.359
October,	24525	2445	13812	1.533	1.767
November,	39310	7260	17048	1.892	2.111
December,	67390	9200	26871	2.982	3.438
The year,	69100	1465	13962	1.550	21.109
1907.					
January,	66540	10535	37796	4.195	4.837
February,	11900	6380	8550	0.949	0.988
March,	86100	6380	37826	4.198	4.840
April,	53000	8375	20148	2.236	2.495
May,	38600	10980	20718	2.299	2.651
June,	37900	7260	16280	1.807	2.016
July,	19000	3490	7306	0.811	0.935
August,	7600	990	2147	0.238	0.275
September,	5840	1220	3114	0.346	0.386
October,	21095	3940	10186	1.131	1.304
November,	37200	6105	17877	1.984	2.213
December,	80600	5080	22873	2.539	2.927
The year,	86100	990	17068	1.895	25.873

a Feb. and March partly frozen. May 6-9, no readings taken.

ESTIMATED MONTHLY DISCHARGE OF ALLEGHENY RIVER, AT KITTANNING, ARMSTRONG COUNTY.

(Drainage area 9,010 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1908.					
January,	44900	6105	19014	2.110	2.433
February,	180000	------------	31007	3.441	3.711
March,	114730	10980	59263	6.577	7.582
April,	44990	15755	27891	3.096	3.455
May,	61600	19590	37138	4.122	4.752
June,	27100	4390	9522	1.057	1.179
July,	25800	4165	9105	1.011	1.165
August,	4020	1305	2743	0.304	0.350
September,	1305	850	996	0.111	0.124
October,	1185	850	975	0.108	0.125
November,	1565	850	1175	0.130	0.145
December,	16250	1305	4356	0.483	0.557
The year,	180000	850	16932	1.879	25.578
1909.					
January,	77900	7600	27197	3.019	3.481
February,	104700	6980	40307	4.474	4.659
March,	50780	11900	27894	3.096	3.569
April,	176000	14525	28082	3.117	3.478
May,	173000	6660	33576	3.727	4.297
June,	20190	5080	12014	1.333	1.487
July,	7600	1920	3234	0.359	0.414
August,	2850	880	1421	0.158	0.182
September,	1340	775	934	0.104	0.116
October,	3825	880	1897	0.211	0.243
November,	10625	1535	3345	0.371	0.414
December,	12605	1280	6596	0.732	0.844
The year,	176000	775	15541	1.725	23.184
1910.					
January,	83300	7199	25728	2.855	3.291
February,	121000	10624	17587	1.952	2.033
March,	147000	19890	61849	6.864	7.913
April,	56684	6052	18227	2.023	2.257
May,	20840	6926	14172	1.573	1.814
June,	13897	2316	7070	0.784	0.875
July,	3314	1352	2036	0.226	0.261
August,	1771	968	1278	0.144	0.166
September,	13800	1196	4290	0.476	0.531
October,	10080	1920	3961	0.440	0.507
November,	31902	11340	20077	2.228	2.486
December,	77900	4390	15328	1.701	1.961
The year,	147000	968	15967	1.772	24.095
1911.					
January,	125000	11440	45493	5.049	5.821
February,	67815	10535	26417	2.932	3.053
March,	45700	3512	18916	2.099	2.420
April,	47350	15260	28876	3.205	3.576
May,	22088	5335	9546	1.059	1.221
June,	8988	2542	5485	0.609	0.680
July,	5840	1100	1865	0.207	0.239
August,	67390	990	6758	0.750	0.865
September,	70840	5840	21972	2.439	2.721
October,	116500	7600	27359	3.037	3.501
November,	67815	8988	25487	2.829	3.156
December,	61360	13078	28592	3.173	3.658
The year,	125000	990	20564	2.282	30.911

CROOKED CREEK.

DESCRIPTION OF BASIN.

Crooked creek, a tributary of the Allegheny river, in Armstrong county, drains approximately 290 square miles. Rising in numerous branches in the west central part of Indiana county, it follows first a general southwesterly course through a coal mining and farming region to the Indiana -Armstrong county line, and then turns northwest through a sparsely settled farming region to its mouth at Rosston, a total distance of approximately 54 miles.

This basin is largely deforested, and in some sections the hillsides are bare. The elevation of the source of Crooked creek is about 1,400 feet, and of the mouth, 786 feet. Near the headwaters the fall is rapid, averaging in seven and one-half miles about 40 feet per mile, while below this point to its mouth, a distance of approximately 46 miles, the rate of fall is very uniform, being at the rate of 7 feet per mile. The principal tributaries are Plum creek and Cherry run. This creek flows in a broad valley, which lies about 300 to 400 feet below the elevation of the adjacent hills, the bottom is stony and the stream tortuous in its course.

Numerous farming and coal mining villages lie in this drainage area, and some of these obtain water supplies from the stream or its tributaries. The stream proper is badly polluted by coal mine washing (effluents).

The mean annual precipitation over this watershed is from 40 to 45 inches.

The discharge has been measured since October 16, 1909, at Hileman's Farm, approximately 3 miles above the mouth.

OHIO BASIN—STATION NO. 14.

CROOKED CREEK AT HILEMAN'S FARM, ARMSTRONG CO., PA.

This station was established on October 16, 1909, by the Water Supply Commission of Pennsylvania, in co-operation with the Flood Commission of Pittsburgh, and is located about 3 miles above the mouth, and about 3½ miles from Ford City, on a single span, steel, through-truss, highway bridge.

The channel is straight for 800 feet above and 500 feet below the station. Both banks are high and do not overflow. The bed of the stream is rocky, deep, and velocity is slight at low stages.

Discharge measurements are taken from the downstream side of the bridge during medium and high stages, and by wading at low stages. The initial point for soundings is top edge of bridge seat, right abutment.

On October 16, 1909, a staff gage was bolted to the upstream face of the right abutment, but January 16, 1910, this gage was carried away by the ice. On February 3, 1910, a chain gage was placed on the upstream handrail near the right bank. Length of chain from bottom of weight to marker is 22.70 feet. The elevation of zero is arbitrary datum. Bench Mark No. 1 is on top of stone in upstream face or wing of right abutment, 2 inches from right end of stone; stone is 7th course down from bridge seat, and 8th stone in from face, 6 feet more or less from top of wall; elevation 12.95 feet above gage datum. The gage is read twice daily by J. T. Hileman.

Since the establishment of this station, 12 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF CROOKED CREEK, AT HILEMAN'S FARM, ARMSTRONG COUNTY, PENNA.

(Drainage area 279 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
	1910.		Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.	
1	Feb. 3,	Grant,	136	409	0.70	2.50	285	
2	Mar. 1,	Eckels,	138	1037	5.08	7.07	5260	
3	Mar. 1,	Eckels,,	137	682	2.93	4.53	2002	Surface msmt.
4	Mar. 3,	Grant,	137	970	4.61	6.62	4466	
5	Mar. 5,	Hammel,	137	813	3.74	5.45	3032	
6	May 25,	Drake,	135	316	0.40	1.94	125	
7	June 18,	Drake,	135	239	0.26	1.59	64	
8	June 30,	Gannett,	132	257	0.18	1.48	45	
9	Nov. 4,	Drake,	133	275	0.24	1.67	67	
	1911.							
10	June 22,	Drake,	23	14	0.71	1.10	10	Wading msmt.
11	Oct. 24,	Ryder,	132	388	0.86	2.33	336	
	1912.							
12	July 31,	Boehringer,	72	89	1.72	2.00	153	Wading msmt.

DISCHARGE TABLE FOR CROOKED CREEK, AT HILEMAN'S FARM, ARMSTRONG COUNTY, FROM OCT. 16, 1909.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.50	2	.60	359	.70	2180	.80	4770	.80	8500
.60	2	.70	403	.80	2300	.90	4920	.90	8700
.70	2	.80	451	.90	2420	7.00	5070	9.00	8900
.80	3	.90	500	5.00	2530	.10	5230	.10	9100
.90	5	3.00	555	.10	2640	.20	5390	.20	9300
1.00	7	.10	620	.20	2750	.30	5560	.30	9500
.10	11	.20	690	.30	2860	.40	5730	.40	9700
.20	18	.30	770	.40	2980	.50	5910	.50	9900
.30	26	.40	850	.50	3090	.60	6100	60	10100
.40	36	.50	940	.60	3200	.70	6300	.70	10300
.50	48	.60	1030	.70	3320	.80	6500	.80	10500
.60	61	.70	1120	.80	3440	.90	6700	.90	10700
.70	77	.80	1220	.90	3560	8.00	6900	10.00	10900
.80	97	.90	1320	6.00	3680	.10	7100	.10	11100
.90	120	4.00	1420	.10	3810	.20	7300	.20	11300
2.00	145	.10	1520	.20	3940	.30	7500	.30	11500
.10	174	.20	1630	.30	4070	.40	7700	.40	11700
.20	205	.30	1740	.40	4200	.50	7900	.50	11900
.30	240	.40	1850	.50	4340	.60	8100	.60	12100
.40	278	.50	1960	.60	4480	.70	8300		
.50	318	.60	2070	.70	4620				

DAILY MEAN GAGE HEIGHTS AND DISCHARGE OF CROOKED CREEK, AT HILEMAN'S FARM, ARMSTRONG COUNTY, PA.

1909. Day.	OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.
1,			1.25	22	1.15	14
2,			1.10	11	1.25	22
3,			1.15	14	1.10	11
4,			1.10	11	1.10	11
5,			1.25	22	1.15	14
6,			1.18	17	1.25	22
7,			1.22	20	1.25	22
8,			1.18	17	1.20	18
9,			1.15	14	1.25	22
10,			1.22	20	1.15	14
11,			1.25	22	1.20	18
12,			1.10	11	1.15	14
13,			1.22	20	1.45	42
14,			1.25	22	3.40	850
15,			1.15	14	2.85	476
16,	1.30	26	1.15	14	1.85	108
17,	1.15	14	1.28	24	1.80	97
18,	1.15	14	1.10	11	1.55	54
19,	1.18	17	1.22	20	1.35	31
20,	1.15	14	1.20	18	1.15	14
21,	1.18	17	1.32	28	1.35	31
22,	1.10	11	1.22	20	1.40	36
23,	1.22	20	1.25	22	1.25	22
24,	1.22	20	1.25	22	1.35	31
25,	1.30	26	1.32	28	1.15	14
26,	1.50	48	1.22	20	1.15	14
27,	1.25	22	1.22	20	1.20	18
28,	1.10	11	1.30	26	1.25	22
29,	1.15	14	1.25	22	1.15	14
30,	1.10	11	1.25	22	1.20	18
31,	1.20	18			1.25	22

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CROOKED CREEK, AT HILEMAN'S FARM, ARMSTRONG COUNTY, PA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.65	69	-----	-----	c7.10	5230	1.50	48	1.71	79	1.61	63	1.40	36	1.11	12	0.75	2	1.80	97	1.25	22	3.60	1030
2,	1.85	108	-----	-----	6.15	3880	1.60	61	1.60	61	1.55	54	1.25	22	1.05	9	0.80	3	1.45	42	1.25	22	3.00	555
3,	1.95	132	-----	-----	5.72	3340	1.55	54	1.68	74	1.65	69	1.35	31	1.16	15	0.95	6	1.65	69	1.50	48	2.35	259
4,	2.25	222	-----	-----	4.80	2300	1.60	61	1.60	61	1.60	61	1.30	26	1.30	26	2.65	381	1.55	54	1.75	87	1.85	108
5,	2.50	318	-----	-----	4.55	2020	1.61	63	1.71	79	1.55	54	1.10	11	1.10	11	2.65	381	1.30	26	1.55	54	1.85	108
6,	2.85	476	-----	-----	4.55	2020	1.48	46	1.65	69	1.51	49	1.10	11	1.10	11	1.95	132	1.50	48	1.40	36	1.80	97
7,	3.05	588	-----	-----	4.65	2120	1.40	36	1.60	61	1.56	56	1.35	31	1.15	14	1.85	108	1.50	48	1.55	54	1.90	120
8,	2.95	528	-----	-----	3.60	1030	1.60	61	1.70	77	1.56	56	1.70	77	1.15	14	3.40	850	1.45	42	1.60	61	1.85	108
9,	3.45	895	-----	-----	3.10	620	1.52	51	1.70	77	1.60	61	1.65	69	1.20	18	3.20	690	1.75	87	1.45	42	1.80	97
10,	3.65	1080	-----	-----	2.80	451	1.31	27	1.51	49	1.36	32	1.21	19	0.95	6	2.35	259	1.50	48	1.30	26	1.80	97
11,	3.85	1270	-----	-----	2.55	338	1.35	31	1.75	87	1.58	58	1.35	31	1.25	22	1.70	77	1.55	54	1.45	42	1.65	69
12,	3.45	895	-----	-----	2.30	240	1.32	28	1.71	79	1.65	69	1.45	42	1.15	14	1.15	14	1.65	69	1.60	61	1.65	69
13,	3.30	770	2.65	381	2.35	259	1.40	36	1.66	71	1.55	54	1.35	31	1.05	9	1.00	7	1.90	120	1.40	36	1.70	77
14.	3.15	655	2.70	403	2.42	286	1.21	19	1.52	51	1.60	61	1.65	69	0.95	6	0.85	4	1.80	97	1.55	54	1.70	77
15,	3.05	588	2.80	451	2.20	205	1.30	26	1.75	87	1.40	36	1.70	77	0.75	2	0.85	4	1.55	54	1.40	36	1.75	87
16,	4.35	1800	4.20	1630	2.15	190	1.36	32	1.66	71	1.56	56	1.70	77	0.80	3	0.80	3	1.55	54	1.60	61	1.80	97
17,	3.80	1220	4.75	2240	1.85	108	1.50	48	1.75	87	1.55	54	1.35	31	0.75	2	0.95	6	1.40	36	1.40	36	1.80	97
18,	4.00	1420	4.60	2070	2.00	145	2.15	190	1.65	69	1.45	42	1.40	36	0.85	4	1.85	108	1.45	42	1.50	48	2.25	222
19,	a	-----	5.50	3090	2.00	145	2.25	222	1.90	120	1.60	61	1.55	54	0.70	2	1.75	87	1.55	54	1.45	42	2.30	240
20,	-----	-----	5.50	3090	2.10	174	2.45	298	1.75	87	1.45	42	1.55	54	0.75	2	1.75	87	1.55	54	1.35	31	2.15	190
21,	-----	-----	5.70	3320	1.88	115	3.36	818	2.30	240	1.50	48	1.80	97	0.70	2	1.80	97	1.45	42	1.60	61	2.50	318
22,	-----	-----	5.20	2750	1.66	71	2.81	456	1.95	132	1.55	54	1.90	120	0.80	3	1.95	132	1.50	48	1.65	69	2.90	500
23,	-----	-----	4.50	1960	1.80	97	2.35	259	2.00	145	1.42	38	1.85	108	0.70	2	2.35	259	1.20	18	1.65	69	3.25	730
24,	-----	-----	4.05	1470	1.86	111	2.70	403	1.90	120	1.35	31	1.15	14	0.75	2	3.15	655	1.35	31	1.80	97	4.00	1420
25,	-----	-----	4.22	1650	1.98	140	3.51	949	1.80	97	1.20	18	1.00	7	0.75	2	2.60	359	1.10	11	1.65	69	3.15	655
26,	-----	-----	5.15	2700	1.91	122	3.88	1300	1.81	99	1.50	48	1.15	14	0.75	2	2.00	145	1.25	22	1.65	69	2.70	403
27,	-----	-----	5.45	3040	1.76	89	d5.00	2530	1.85	108	1.55	54	1.25	22	0.75	2	1.75	87	1.35	31	1.85	108	2.55	338
28,	-----	-----	b 9.10	9100	1.80	97	4.81	2310	1.65	69	1.50	48	1.21	19	0.85	4	1.80	97	1.35	31	2.05	160	2.25	222
29,	-----	-----	-----	-----	1.72	81	3.25	730	1.76	89	1.61	63	1.25	22	0.80	3	1.90	120	1.25	22	2.75	427	3.10	620
30,	-----	-----	-----	-----	1.66	71	2.46	902	1.55	54	1.45	42	1.15	14	0.60	2	1.80	97	1.25	22	2.80	451	e6.90	4920
31,	-----	-----	-----	-----	1.52	51	-----	-----	1.56	55	-----	-----	1.10	11	0.65	2	-----	-----	1.40	36	-----	-----	4.30	1740

a Gage carried away by ice, following which there were two flood periods during which no estimates were made.
b Maximum 9.30 at 5.30 P. M. 9500 sec. ft.
c Maximum 7.6 at 7.30 A. M. 6100 sec. ft.
d Maximum 5.8 at 5.00 P. M. 3440 sec. ft.
e Maximum 7.50 at 7 A. M. 5910 sec. ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CROOKED CREEK, AT HILEMAN'S FARM, ARMSTRONG COUNTY, PA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.32	786	3.57	1000	2.58	351	2.21	208	3.06	594	1.35	31	1.25	22	1.25	22	0.55	2	1.70	77	1.69	75	2.34	255
2,	3.32	786	3.67	1090	2.61	363	2.36	262	2.86	480	1.25	22	1.45	42	1.45	42	0.55	2	1.65	69	1.69	75	2.59	355
3,	2.92	511	2.72	413	2.71	408	2.26	226	2.41	282	1.25	22	1.25	22	1.50	48	0.75	2	1.80	97	1.59	60	2.59	355
4,	2.82	461	2.62	368	2.61	363	2.56	343	2.36	263	1.45	42	1.05	9	1.15	14	0.75	2	1.90	120	1.64	67	2.29	236
5,	2.52	326	2.62	368	2.46	302	2.96	533	2.26	226	1.40	36	1.15	14	1.05	9	0.80	3	1.75	87	1.99	142	2.09	171
6,	2.32	248	2.72	413	2.66	385	3.26	738	2.21	208	1.25	22	1.30	26	1.10	11	2.90	500	1.65	69	1.79	95	2.29	236
7,	2.12	180	2.87	485	2.56	342	3.56	994	2.41	282	1.55	54	1.05	9	1.25	22	2.35	259	5.10	2640	1.69	75	2.29	236
8,	2.22	212	2.87	485	2.36	262	3.56	994	2.16	193	1.75	87	0.90	5	1.25	22	2.30	240	4.10	1520	1.79	95	2.04	157
9,	2.27	230	2.72	413	2.46	302	3.26	738	2.46	302	2.25	222	1.05	9	1.15	14	5.60	3200	3.80	1220	1.89	118	2.09	171
10,	2.17	196	2.62	368	2.66	385	3.21	698	2.60	385	2.65	381	1.00	7	1.20	18	3.75	1170	3.45	895	1.84	106	2.44	294
11,	2.42	286	2.62	368	2.71	408	3.61	1040	2.36	263	3.05	588	1.25	22	1.05	9	1.80	97	3.05	588	1.69	75	2.84	471
12,	2.97	539	2.42	286	2.36	262	3.36	818	2.36	263	2.85	476	1.30	26	1.10	11	1.55	54	2.65	381	1.79	95	3.04	581
13,	4.42	1870	2.62	368	2.46	302	2.96	533	2.36	263	2.55	338	0.90	5	0.75	2	1.65	69	2.35	259	1.84	106	3.29	762
14,	a 9.47	9840	2.82	461	2.66	385	2.81	456	2.26	226	2.45	298	0.85	4	0.65	2	b 7.40	5730	2.45	298	2.09	171	3.94	1360
15,	7.82	6540	2.92	511	2.71	408	3.31	778	2.06	162	2.35	259	1.05	9	0.50	2	7.60	6100	2.65	381	2.29	236	6.04	3720
16,	5.57	3170	3.52	958	2.41	282	3.66	1080	1.76	89	2.35	259	1.05	9	0.65	2	3.95	1370	4.30	1740	2.29	236	d6.49	4330
17,	3.37	826	3.52	958	2.46	302	3.46	904	1.96	135	2.60	359	0.90	5	0.75	2	2.30	240	c6.55	4410	2.44	294	5.59	3190
18,	2.92	511	3.72	1140	2.36	262	3.66	1080	1.66	71	1.65	69	0.75	2	0.55	2	1.70	77	5.10	2640	3.19	683	4.34	1780
19,	2.62	368	3.47	913	2.26	226	3.71	1130	1.56	56	1.75	87	1.05	9	0.65	2	1.70	77	3.80	1220	3.54	976	3.39	842
20,	2.52	326	3.22	706	2.16	193	3.66	1080	1.76	89	1.70	77	1.30	26	0.65	2	1.55	54	3.20	690	2.89	495	2.79	446
21,	2.57	346	2.97	539	2.31	244	4.01	1430	1.86	111	1.45	42	1.10	11	0.75	2	1.65	69	2.95	528	2.74	422	3.09	614
22,	2.52	326	2.77	437	2.16	193	3.91	1330	1.66	71	1.25	22	1.45	42	0.75	2	2.05	160	2.75	427	2.99	550	2.79	446
23,	2.67	390	2.62	368	2.26	226	3.66	1080	1.46	43	1.15	14	1.55	54	0.75	2	1.85	108	2.35	259	3.04	581	2.59	355
24,	2.42	286	2.77	437	2.21	208	3.26	738	1.56	56	1.60	61	1.55	54	0.55	2	1.75	87	2.00	145	2.89	495	2.84	471
25,	2.27	230	2.47	306	2.36	262	3.61	1040	1.61	63	1.70	77	1.50	48	0.65	2	1.70	77	1.89	118	3.09	614	2.74	422
26,	2.42	286	2.18	199	2.16	193	3.71	1130	1.61	63	1.55	54	1.40	36	0.65	2	2.40	278	1.79	95	2.84	471	2.69	399
27,	2.92	511	2.53	330	2.36	262	3.36	818	1.36	32	1.45	42	1.30	26	0.65	2	3.70	1120	1.79	95	2.59	355	2.64	377
28,	5.32	2880	2.43	290	2.26	226	2.96	533	1.56	56	1.25	22	1.35	31	0.60	2	2.85	476	1.99	142	2.39	274	2.79	446
29,	3.82	1240	-----	-----	2.26	226	3.26	738	1.66	71	1.05	9	1.15	14	0.55	2	2.40	278	1.89	118	2.54	334	2.74	422
30,	3.47	913	-----	-----	2.36	262	3.41	859	1.56	56	1.00	7	1.35	31	0.65	2	1.90	120	1.89	118	2.49	314	3.04	581
31,	2.97	539	-----	-----	2.16	193	-----	-----	1.56	56	-----	-----	1.30	26	0.60	2	-----	-----	1.84	106	-----	-----	3.94	1360

a Maximum 9.77 ft.=10400 sec. ft.
b Maximum 10.60 ft.=12100 sec. ft.
c Maximum 6.91 ft.= 4940 sec. ft.
d Maximum 6.94 ft.= 4980 sec. ft.

ESTIMATED MONTHLY DISCHARGE OF CROOKED CREEK, AT HILEMAN'S FARM, ARMSTRONG COUNTY.

(Drainage area 279 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1909.					
November,	28	11	19	0.068	0.076
December,	850	11	68	.244	.281
1910.					
March,	6100	51	843	3.021	3.483
April,	3440	19	403	1.444	1.611
May,	240	49	87	.312	.359
June,	69	18	51	.183	.204
July,	120	7	41	.147	.169
August,	26	2	7	.025	.029
September,	850	2	175	.627	.700
October,	120	11	49	.176	.204
November,	451	22	83	.297	.332
December,	5910	69	509	.182	.210
1911.					
January,	10400	180	1166	4.179	4.818
February,	1140	199	535	1.918	1.997
March,	408	193	290	1.039	1.198
April,	1130	208	811	2.907	3.244
May,	594	32	178	.638	.736
June,	588	7	136	.487	.544
July,	54	2	21	.075	.086
August,	48	2	9	.032	.037
September,	12100	2	734	2.631	2.935
October,	4940	69	695	2.491	2.872
November,	976	60	290	1.039	1.159
December,	4980	157	834	2.989	3.446
The year,	12100	2	475	1.702	23.072

OHIO BASIN—STATION NO. 15.

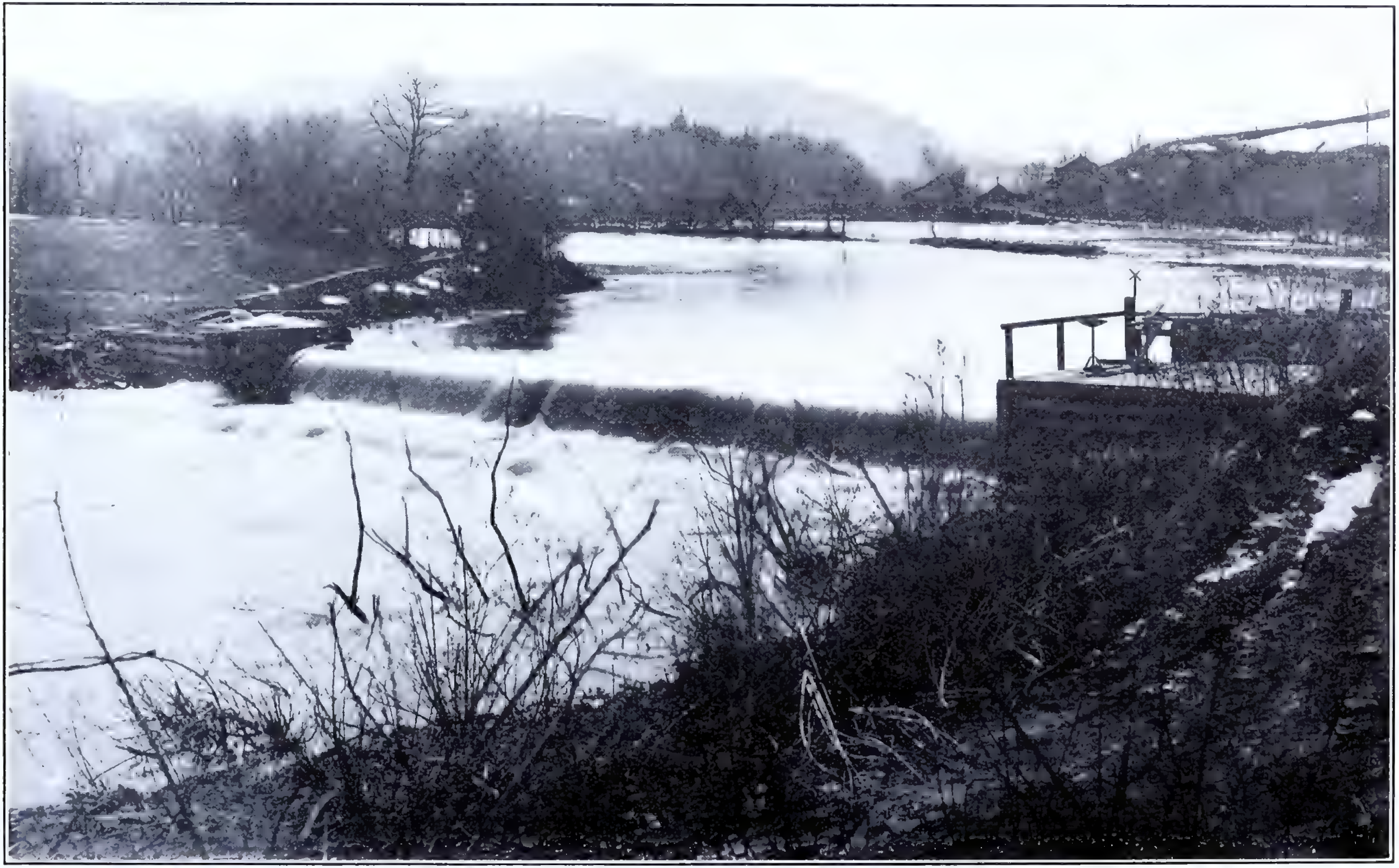
QUEMAHONING CREEK AT STANTON'S MILL, PENN'A.

Quemahoning creek, the largest tributary of Stony creek, rises in the western part of Somerset county, in the mountain range which forms the boundary line between Somerset and Westmoreland counties, and flows in a general northeasterly direction for approximately 17 miles, to its mouth, about one mile above Benson, known locally as Holsopple, Somerset county, 16 miles above Johnstown, and drains a total area of approximately 98 square miles. The fall of the stream, for the first mile from its mouth, is about five feet, while for the next three miles, to where it forks, it is at the rate of thirteen feet per mile, and above this point the fall is steeper. There are numerous tributaries, the largest being Roaring Fork, Pickings run and the North Branch, from the northwest, and Two Mile run and McConaughy's run, from the south. The tributaries from the northwest comprise almost three-quarters of the entire drainage area, those from the south draining but small areas. The valley is quite broad for the first three or four miles from its mouth, but the surrounding hills are high and rolling, the smaller tributaries having steep slopes. Approximately one-half of the watershed is forest covered, the remainder being devoted to agricultural purposes. The principal towns in this watershed are Jerome, Benson, Boswell and Jennertown. At Jerome and Jennertown the stream receives the effluent from coal mines.

From October, 1901, to June, 1910, the discharge was obtained, by the Cambria Steel Company, over a weir at Stanton's Mill, but since the latter date the measurements have been discontinued, owing to the fact that the weir was flooded out by the construction of a large dam approximately two miles below.

The weir was of the sharp crested type without end contractions, constructed of timber and steel. It was so constructed that the length and height of crest could be set at three different positions, to provide for the varying discharge of the creek. For flood discharge the weir was eighty feet long, with a depth of three feet $4\frac{1}{4}$ inches; for medium stages the length of crest was eighteen feet, with a depth of 2 feet, 2 inches, and for minimum stage the crest was eight feet in length and two feet 2 inches deep.

The following data have been furnished by the Cambria Steel Company, of Johnstown, Pa.



Gaging Weir over Quemahoning Creek, above Johnstown.

ESTIMATED MONTHLY DISCHARGE OF QUEMAHONING CREEK, AT STANTON'S MILL, SOMERSET COUNTY.

(Drainage area 92 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1901.					
October,	----	4	----	----	----
November,	204	4	22	0.239	0.267
December,	1146	40	223	2.426	2.797
1902.					
January,	508	30	100	1.088	1.255
February,	‡3077	29	159	1.729	1.800
March,	‡1528	‡104	407	4.430	5.107
April,	1113	52	318	3.455	3.854
May,	136	16	49	.533	.614
June,	3165	9	90	.979	1.092
July,	1898	24	241	2.621	3.022
August	485	8	55	.598	.689
September,	42	3	10	.109	.122
October,	991	17	91	.989	1.140
November,	170	17	37	.402	.448
December,	1317	64	301	3.275	3.776
The year,	3165	3	155	1.684	22.919
1903.					
January,	2276	48	258	0.283	0.326
February,	2751	107	549	5.968	6.215
March,	1584	82	313	3.405	3.926
April,	723	56	230	2.501	2.790
May,	70	17	33	.359	.414
June,	554	13	121	1.317	1.470
July	1666	26	128	1.393	1.606
August,	319	14	69	.751	.866
September,	159	12	41	.446	.498
October,	321	11	44	.478	.551
November,	411	15	69	.751	.828
December,	419	16	64	.696	.802
The year,	2751	11	160	1.529	20.802
1904.					
January,	2585	23.0	231	2.511	2.895
February,	1414	**0.4	208	2.261	2.438
March,	1809	57.0	399	4.337	5.000
April,	850	47.0	227	2.467	2.752
May,	493	54.0	137	1.489	1.717
June,	85	13.0	37	.402	.448
July,	787	15.0	149	1.620	1.868
August	102	12.0	31	0.337	0.388
September,	41	6.0	11	0.120	0.134
October,	16	4.0	8	0.087	0.097
November,	11	6.0	8	0.087	0.097
December,	541	5.0	65	0.707	0.779
The year,	2585	0.4	126	1.369	18.624

**Low flow due to frozen condition of stream.

ESTIMATED MONTHLY DISCHARGE OF QUEMAHONING CREEK, AT STANTON'S MILL, SOMERSET COUNTY.

(Drainage area 92 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1905.					
January,	613	35	109	1.185	1.366
February,	98	16	34	.370	.385
March,	1764	48	462	5.022	5.790
April,	809	83	224	2.435	2.716
May,	434	39	112	1.217	1.403
June,	770	42	212	2.304	2.570
July,	376	29	146	1.587	1.830
August,	611	41	203	2.207	2.544
September,	1534	24	128	1.391	1.552
October,	695	17	104	1.130	1.303
November,	1255	36	123	1.337	1.492
December,	232	42	288	3.130	3.609
The year,	1764	16	179	1.943	26.560
1906.					
January,	1057	74	252	2.739	3.158
February,	216	26	63	.685	.714
March,	1292	45	258	2.804	3.233
April,	744	74	289	3.141	3.504
May,	170	23	68	.739	.852
June,	3372	31	288	3.130	3.492
July,	116	17	40	.435	.502
August,	618	17	133	1.446	1.667
September,	58	9	22	.239	.267
October,	33	9	17	.185	.214
November,	256	8	45	.489	.546
December,	1144	45	281	3.054	3.521
The year,	3372	8	146	1.590	21.670
1907.					
January,	2397	75	522	5.678	6.546
February,	425	73	140	1.522	1.585
March,	4126	75	590	6.420	7.402
April,	521	54	173	1.882	1.960
May,	816	55	168	1.828	2.108
June,	986	53	252	2.740	2.853
July,	476	25	86	.935	1.078
August,	1661	15	130	1.413	1.629
September,	285	30	74	.805	.838
October,	247	21	56	.609	.702
November,	1108	44	218	2.370	2.468
December,	994	52	262	2.850	3.286
The year,	4126	15	223	2.421	32.455

ESTIMATED MONTHLY DISCHARGE, QUEMAHONING CREEK AT STANTON'S MILL, SOMERSET COUNTY.

(Drainage area 92 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1908.					
January,	815	51	203	2.207	2.544
February,	2656	42	232	2.522	2.720
March,	2769	54	702	7.630	8.797
April,	660	71	268	2.891	3.225
May,	1224	99	251	2.728	3.145
June,	127	14	42	.457	.510
July,	258	7	27	.293	.338
August,	29	4	8	.087	.100
September,	3	5	1.4	.015	.016
October,	4	2	2	.022	.025
November,	8	2	4	.043	.048
December,	256	2	24	.261	.301
The year,	2769	0.5	147	1.596	21.769
1909.					
January,	419	17	113	1.228	1.416
February,	1335	47	310	3.370	3.509
March,	629	85	275	2.989	3.446
April,	925	150	378	4.109	4.585
May,	427	28	107	1.163	1.341
June,	993	30	191	2.076	2.316
July,	157	9	28	.304	.350
August,	226	4	44	.478	.551
September,	70	6	19	.206	.230
October,	330	5	61	.663	.764
November,	44	21	28	.304	.339
December,	326	18	59	.642	.740
The year,	1335	4	134	1.461	19.587
1910					
January,	2137	44	412	4.479	5.164
February,,	1108	796	238	2.587	2.694
March,	1366	44	341	3.709	4.276
April,	842	29	*123	1.338	1.493
May,	207	65	†105	1.142	1.316
June, ‡					

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*For 26 days.
†For 19 days.
‡Wier flooded.

OHIO BASIN—STATION NO. 16.

MILL CREEK AT BEN'S CREEK.

Mill creek, a tributary of Ben's creek, rises in the extreme southwest corner of Cambria county and flows in a general southeasterly direction, for approximately seven miles, to its mouth, about one mile above the mouth of Ben's creek, in Somerset county. It drains a total area of approximately 6.25 square miles. The elevation of the source is approximately 1900 feet above sea level and of the mouth 1200 feet, or an average fall of approximately 100 feet per mile, the lower three and one-half miles of the stream passing through a steep narrow valley. There are but few tributaries, those being small mountain streams, and the watershed being almost entirely uninhabited.

There are two large storage reservoirs on this stream, the lower one being one and one-half miles and the upper two miles above the mouth. The capacity of these reservoirs in the aggregate is about 129,000,000 gallons. The stream is used for domestic and municipal purposes in Johnstown.

The mean annual precipitation over this watershed is from 45 to 50 inches.

From August, 1901, to April, 1911, inclusive, the discharge of this stream was measured over a weir about one mile above the mouth and below the reservoirs. The weir is made of three inch plank and is twenty feet in length on the crest, in the clear, and is of the sharp crested type. The crest of the weir is two feet six inches above the bottom of the dam, with the end contractions three feet above the crest. This station was discontinued on May 1st, 1911, on account of it being flooded out by the construction of a large dam on Quemahoning creek.

The following data have been furnished by the Cambria Steel Company, Johnstown, Pa., who maintained and operated this weir.

ESTIMATED MONTHLY DISCHARGE OF MILL CREEK, AT BEN'S CREEK, CAMBRIA COUNTY.

(Drainage area 5.6 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1901.					
August,	5	1.1	2	0.357	0.412
September,	8	1.4	3	.536	.598
October,	2	.9	1	.179	.206
November,	21	.8	3	.536	.598
December,	51	4.4	18	3.215	3.706
1902.					
January,	42	5.4	12	2.143	2.471
February,	196	3.3	14	2.500	2.603
March,	146	11.0	43	7.680	8.854
April,	82	4.7	22	3.928	4.383
May,	12	2.7	6	1.172	1.351
June,	28	1.4	3	.536	.598
July,	80	2.8	18	3.215	3.706
August,	30	1.2	3	.536	.618
September,	2	.8	1	.179	.200
October,	30	2.3	7	1.250	1.441
November,	11	1.9	3	.536	.598
December,	62	6.8	23	4.110	4.738
The year,	196	0.8	13	2.315	31.561
1903.					
January,	124	5	19	3.394	3.913
February,	149	9	39	6.970	7.258
March,	111	10	28	5.000	5.764
April,	74	8	24	4.280	4.775
May,	9	3	5	.893	1.029
June,	137	5	17	3.035	3.386
July,	19	5	9	1.607	1.853
August,	227	3	15	2.680	3.090
September,	22	4	9	1.607	1.793
October,	48	4	8	1.428	1.647
November,	51	3	10	1.785	1.992
December,	27	3	7	1.250	1.441
The year,	227	3	16	2.827	37.941
1904.					
January,	121	4	20	3.575	4.122
February,	60	8	20	3.575	3.856
March,	210	13	48	8.575	9.886
April,	163	9	26	4.645	5.182
May,	26	7	13	2.322	2.677
June,	8	4	5	.893	.996
July,	205	3	21	3.750	4.323
August,	7	2	3	.536	.618
September,	4	1	2	.357	.398
October,	3	1	2	.357	.412
November,	2	1	2	.357	.398
December,	34	1	8	1.428	1.647
The year,	210	1	14	2.531	34.515

ESTIMATED MONTHLY DISCHARGE OF MILL CREEK, AT BEN'S CREEK, CAMBRIA COUNTY.

(Drainage area 5.6 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1905.					
January,	29	6	12	2.143	2.471
February,	10	5	7	1.250	1.302
March,	204	9	47	8.400	9.684
April,	59	12	20	3.570	3.983
May,	31	6	12	2.143	2.471
June,	66	6	19	3.395	3.788
July,	93	5	18	3.215	3.706
August,	45	5	13	2.305	2.658
September,	124	3	12	2.143	2.391
October,	25	2	8	1.428	1.647
November,	7	4	11	1.965	2.192
December,	122	7	23	4.120	4.750
The year,	204	2	17	3.006	41.043
1906.					
January,	58	9.3	21.3	3.805	4.387
February,	12	3.2	6.1	1.089	1.134
March,	76	5.3	14.2	2.535	2.922
April,	67	7.6	27.1	4.980	5.556
May,	8	3.7	5.5	.982	1.132
June,	150	2.6	19.8	3.535	3.944
July,	11	2.3	4.3	.768	.885
August,	29	2.1	4.8	.857	.988
September,	5	.7	1.6	.286	.319
October,	1	.8	.9	.161	.184
November,	12	.8	3.7	.661	.736
December,	77	3.9	19.2	.339	.391
The year,	150	0.7	10.7	1.666	22.578
1907.					
January,	207	5	43	7.680	8.854
February,	14	4	7	1.250	1.302
March,	322	5	43	7.680	8.854
April,	31	7	15	2.680	2.990
May,	30	5	11	1.964	2.264
June,	73	5	17	3.035	3.386
July,	46	5	13	2.322	2.677
August,	17	2	5	.893	1.029
September,	28	4	12	2.145	2.394
October,	16	3	6	1.071	1.235
November,	78	6	17	3.035	3.386
December,	42	4	17	3.035	3.499
The year,	322	2	17	3.066	41.870
1908.					
January,	32.0	5.0	12.9	2.305	2.658
February,	75.0	4.3	15.3	2.732	2.946
March,	293.0	8.0	56.2	10.031	11.570
April,	45.0	8.4	20.8	3.715	4.144
May,	73.0	9.3	22.4	4.000	4.612
June,	18.0	1.3	5.1	0.912	1.018
July,	4.0	.9	1.6	.286	.330
August,	2.0	.5	.9	.161	.186
September,	.6	.3	.4	.071	.079
October,	.5	.3	.3	.054	.062
November,	.6	.3	.4	.071	.079
December,	20.0	.3	1.6	.286	.330
The year,	293.0	0.3	11.5	2.052	28.014

ESTIMATED MONTHLY DISCHARGE OF MILL CREEK, AT BEN'S CREEK, CAMBRIA COUNTY.

(Drainage area 5.6 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1909.					
January,	25	0.718	6.0	1.072	1.236
February,	84	3.021	20.0	3.570	3.718
March,	42	7.164	17.0	3.035	3.499
April,	43	8.056	19.0	3.392	3.784
May,	28	1.910	9.0	1.608	1.854
June,	26	1.597	8.0	1.428	1.593
July,	5	.023	1.0	.179	.206
August,	11	.004	1.0	.179	.206
September,	*3	*.035	*0.5	.089	.099
October,	9	.590	3.0	.536	.618
November,	3	1.678	2.0	.357	.398
December,	6	1.609	3.0	.536	.618
The year,	84	0.004	7.5	1.332	17.829

*For 25 days.

MONTH.	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1910.					
January,	38	3.2	20.5	3.662	4.222
February,	35	6.3	*13.3	2.376	2.474
March,	68	6.2	‡28.9	5.160	5.949
April,	31	3.3	12.0	2.144	2.392
May,	15	5.8	9.3	1.662	1.916
June,	23	4.4	13.9	2.484	2.771
July,	8	1.0	†4.5	.804	.927
August,	2	.6	1.2	.214	.247
September,	2	.3	.8	.143	.159
October,	1	.2	.5	.089	.103
November,	3	.4	1.4	.250	.279
December,	10	2.0	4.0	.714	.823
The year,	68	0.2	9.2	1.642	22.262

*For 26 days.
‡For 30 days.
†For 25 days.

MONTH.	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1911.					
January.	55	6	22	3.928	4.529
February,	26	5	14	2.500	2.603
March,	20	3	12	2.145	2.473
April,	53	6	19	3.394	3.786

BLACK LICK CREEK.

DESCRIPTION OF BASIN.

Black Lick creek, one of the largest of the tributaries of the Conemaugh river, is formed by the junction of the North and South Branches on the line between Indiana and Cambria counties at Vintondale. It thence flows westerly through the southern part of Indiana county for about 26 miles to its mouth near Blairsville. The total drainage area tributary above its mouth is 412 square miles. The North Branch rises in the southwestern part of Carroll township, at an elevation of 2,000 feet, and is 16 miles long, draining 70 square miles, and the latter rises in the northern part of Cambria township and is approximately the same length, draining 48 square miles.

In its extreme upper portion the North Branch flows through a steep mountainous country, while the lower portion contains more cleared land, is more inhabited and the hills are lower and less steep. The watershed of the South Branch is similar but is more inhabited and includes considerable bituminous coal, which is being actively mined.

The valley of the main creek is rather broad, with numerous wide flat areas, similar to the one at its junction with its chief tributary, Two Lick creek, at Josephine. The rounded hills, which rise some 400 to 500 feet on either side are often wooded.

Below the forks of the North and South Branches and extending to its mouth and up Two Lick creek, is an extensive bituminous coal field. The main valleys are largely under cultivation, but numerous tributaries drain areas densely covered with second growth.

The slope between the forks and mouth is 18.3 feet per mile, quite sluggish at some points and exceedingly rapid at others.

The North and South Branches and Two Lick creek are all used for domestic and industrial supply, as well as certain other tributaries, while the use of water from the main stream and the tributaries by coal mines, steel works, etc., is extensive.

The mean annual precipitation over this water shed is from 40 to 50 inches.

The discharge has been measured since August 16th, 1904, at Black Lick, just below the mouth of Two Lick creek.

OHIO BASIN—STATION NO. 17.

BLACK LICK CREEK AT BLACK LICK, PA.

DESCRIPTION OF STATION.

This station was established by the United States Geological Survey on August 16th, 1904. On July 15th, 1906, it was discontinued by the Survey and on January 8th, 1907, it was re-established by the Water Supply Commission of Pennsylvania, which has been operating the station since that date. It was originally located at a covered wooden highway bridge one-quarter of a mile from the railroad station at Black Lick, but during September, 1905, this bridge was torn down and was replaced by a three span, steel, through truss, highway bridge.

The channel above the station is straight for 2,000 feet, while below it is straight for 250 feet, to an island, at which point it bends to the right. The right bank is high and not subject to overflow, while the left bank overflows above gage height 11.5 feet. The bed is of gravel, sand and boulders and is permanent.

Discharge measurements are made from the upstream side of the bridge at ordinary stages; from a coal tipple one-quarter mile above the bridge at high stages; and by wading above the bridge at extreme low stages. Initial point for soundings, at the highway bridge, is the first angle post in upstream hand-rail at left bank.

A standard chain gage was established November 9th, 1905, on the present bridge being referred to the same datum as the former gage on the covered bridge. While the steel bridge was under construction the stage of the creek was observed on a staff gage, to the same datum as the original gage. The present gage is bolted to the upstream side of the bridge. The length of the chain from bottom of weight to the marker is 20.16 feet. The elevation of zero is arbitrary datum. Bench mark No. 1 is nail in first maple tree from door of Maynard's house, one foot above the ground, driven horizontally, and bent over one inch from the head; elevation, 13.92 feet above gage datum. Bench mark No. 2 is head of four spikes driven into the root of large maple 45 feet from edge of low water and about 190 feet upstream from bridge; elevation, 12.96 feet above gage datum. Bench mark No. 3 is upper edge of horizontal cross plate at elevation of guard rail on upstream side of bridge, 4.3 feet from initial point for soundings; elevation 14.43 feet above gage datum. The gage is read twice daily by D. J. Walling.

Two Lick creek enters the stream about three-fourths of a mile above the bridge. Two miles upstream is a ten foot wooden dam used by the Josephine Furnace and Coke Company for generating electricity for their plant.

Since the establishment of this station 21 discharge measurements have been made. Owing to the inaccuracy of the gage readings for the first six months during the year 1906 no data has been published for that year.

DISCHARGE MEASUREMENTS OF BLACK LICK CREEK, AT BLACK LICK, INDIANA COUNTY, PENNA.

(Drainage area 386 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.	
	1904.							
1	Aug. 12,	Taylor,	205	242	0.26	2.02	63	
2	Sept. 20.	Murphy,	130	61	0.74	1.94	45	
3	Sept. 30,	Grover,	100	37	0.62	1.84	23	
	1905.							
4	Mar. 14,	Grover & Morse,	183	413	4.17	4.49	1724	Made from coal tipple above bridge.
5	Mar. 24,	do	187	473	4.45	4.90	2108	Made from coal tipple above bridge.
6	April 12,	Horton,	188	558	4.33	5.45	2416	Made from coal tipple above bridge.
7	April 15,	do	175	304	3.42	3.86	1040	Made from coal tipple above bridge.
8	June 3,	Packard,	156	153	1.49	2.80	228	Made from coal tipple above bridge.
9	Sept. 1,	Murphy,	140	104	1.23	2.36	128	Made from coal tipple above bridge.
10	Sept. 1,	do	150	118	1.11	2.35	131	Made from coal tipple above bridge.
11	Nov. 2,	do	199	543	0.93	3.36	507	Made from new bdg.
	1906.							
12	May 23,	Follansbee,	210	373	0.32	2.40	118	do
	1907.							
13	May 27,	Taylor,	201	524	0.64	3.04	336	
14	Aug. 14,	Padgett,	98	177	0.27	2.22	47	Section full of drift.
15	Sept. 12,	Horton,	207	776	1.66	4.35	1288	
	1908.							
16	May 11,	Kenneth Grant,	205	759	1.52	4.23	1151	
17	July 24,	do	199	609	0.87	3.41	529	
18	Aug. 22,	Bolster,	100	80	0.45	2.09	36	Made from coal tipple above bridge.
19	Sept. 24,	C. E. Ryder,	28	33	0.20	1.89	6.8	Wading measurem'nt 400 feet below coal tipple.
	1910.							
20	Mar. 1,	Kenneth Grant,	208	1499	4.78	7.94	7175	Surface measmt.
	1912.							
21	Feb. 1,	Boehringer,	198	451	.68	2.95	305	Surface mesmt.

LOW WATER DISCHARGE TABLE FOR BLACK LICK CREEK AT BLACK LICK, INDIANA COUNTY, FROM AUG. 17, 1904 TO DEC. 31, 1905.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.80	20	.10	73	.40	134	.70	210	.90	278
.90	37	.20	92	.50	157	.80	241	3.00	320
2.00	55	.30	113	.60	181				

DISCHARGE TABLE FOR BLACK LICK CREEK, AT BLACK LICK, INDIANA COUNTY, FROM AUG. 17, 1904, TO DEC. 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.90	8	.70	730	.50	2580	.30	5780	.10	9805
2.00	21	.80	805	.60	2720	.40	5990	.20	10040
.10	38	.90	885	.70	2860	.50	6200	.30	10275
.20	59	4.00	965	.80	3010	.60	6410	.40	10510
.30	83	.10	1050	.90	3170	.70	6630	.50	10745
.40	110	.20	1140	6.00	3330	.80	6850	.60	10980
.50	140	.30	1230	.10	3500	.90	7070	.70	11215
.60	172	.40	1320	.20	3670	8.00	7290	.80	11450
.70	205	.50	1420	.30	3840	.10	7510	.90	11685
.80	240	.60	1520	.40	4020	.20	7730	10.00	11920
.90	280	.70	1620	.50	4200	.30	7960	.10	12160
3.00	320	.80	1730	.60	4390	.40	8190	.20	12400
.10	365	.90	1840	.70	4580	.50	8420	.30	12640
.20	415	5.00	1950	.80	4770	.60	8650	.40	12880
.30	470	.10	2070	.90	4960	.70	8880	.50	13120
.40	525	.20	2190	7.00	5160	.80	9110	.60	13360
.50	590	.30	2320	.10	5360	.90	9340	.70	13600
.60	660	.40	2450	.20	5570	9.00	9570		

Note—Discharge below 3.0 feet prior to Dec. 31, 1905, taken from previous discharge table.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF BLACK LICK CREEK, AT BLACK LICK, INDIANA COUNTY, PA.

1904.	AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	1.88	34	1.95	46	2.00	55	2.05	64
2,	------	------	1.90	37	1.92	41	2.00	55	2.30	113
3,	------	------	1.92	41	1.85	28	1.98	51	2.25	102
4,	------	------	1.90	37	1.85	28	1.95	46	2.25	102
5,	------	------	1.90	37	1.90	37	1.90	37	2.30	113
6,	------	------	1.90	37	2.10	73	1.90	37	2.30	113
7,	------	------	1.90	37	2.15	82	2.00	55	†	------
8,	------	------	1.90	37	2.10	73	2.10	73	------	------
9,	------	------	2.00	55	2.00	55	2.15	82	------	------
10,	------	------	2.10	73	2.00	55	2.20	92	------	------
11,	------	------	2.25	102	2.35	124	2.25	102	------	------
12,	------	------	2.10	73	2.62	187	2.30	113	------	------
13,	------	------	2.02	59	2.50	157	2.25	102	------	------
14,	------	------	2.00	55	2.45	146	2.20	92	------	------
15,	------	------	2.20	92	2.30	113	2.20	92	------	------
16,	------	------	2.25	102	2.30	113	2.15	82	------	------
17,	2.18	88	2.15	82	2.22	96	2.15	82	------	------
18,	2.15	82	2.00	55	2.20	92	2.15	82	------	------
19,	2.12	77	2.00	55	2.10	73	2.12	77	------	------
20,	2.02	59	1.95	46	2.00	55	2.00	55	------	------
21,	2.20	92	1.90	37	2.25	102	2.00	55	------	------
22,	2.32	117	1.90	37	2.65	196	1.98	51	------	------
23,	2.42	139	1.95	46	2.55	169	1.95	46	------	------
24,	2.35	124	1.95	46	2.45	146	1.90	37	*	------
25,	2.25	102	2.00	55	2.30	113	2.00	55	4.20	1140
26,	2.50	157	2.02	59	2.20	92	2.00	55	3.90	885
27,	2.25	102	2.05	64	2.20	92	2.00	55	6.90	4960
28,	2.08	69	2.02	59	2.15	82	2.00	55	5.30	2320
29,	1.98	51	2.00	55	2.10	73	2.00	55	4.30	1230
30,	1.95	46	2.00	55	2.10	73	2.05	64	3.80	805
31,	1.90	37	------	------	2.00	55	------	------	3.70	730

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*Ice went out.
†Frozen.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF BLACK LICK CREEK, AT BLACK LICK, INDIANA COUNTY, PA.

1905.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.6	660					3.4	525	3.0	320	3.1	365	3.1	365	4.1	1050	2.4	134	2.2	92	3.6	660	6.4	4020
2,	3.8	805					3.3	470	2.9	278	3.0	320	3.1	365	3.7	730	2.3	113	2.2	92	3.3	470	7.0	5160
3,	4.1	1050					3.2	415	2.9	278	2.8	241	2.9	278	3.3	470	2.3	113	2.3	113	3.2	415	10.7	13600
4.	3.8	805					3.0	320	2.8	241	2.7	210	2.8	241	3.0	320	2.4	134	2.2	92	3.3	470	6.5	4200
5,	3.6	660					3.2	415	2.8	241	2.7	210	3.8	805	3.1	365	2.3	113	2.2	92	3.2	415	5.1	2070
6,	3.5	590					3.4	525	2.9	278	2.7	210	3.3	470	2.8	241	2.2	92	2.2	92	3.7	730	4.6	1520
7,	3.2	415					3.5	590	3.5	590	5.9	3170	3.1	365	3.0	320	2.2	92	2.2	92	3.7	730	4.0	965
8,	3.0	320	2.9	278	7.6	6410	3.4	525	3.4	525	4.6	1520	4.2	1140	3.1	365	2.1	73	2.1	73	3.6	660	3.9	885
9,	3.3	470			7.4	5990	3.5	590	3.1	365	3.9	885	3.5	590	3.0	320	2.1	73	2.1	73	3.5	590	3.7	730
10,	3.2	415			6.5	4200	3.5	590	2.9	278	3.5	590	3.1	365	2.8	241	2.1	73	2.0	55	3.3	470	3.6	660
11,	3.1	365			5.5	2580	6.1	3500	3.0	320	4.2	1140	3.0	320	2.7	210	†6.5	4200	3.4	525	3.2	415	3.5	590
12,	4.4	1320			5.1	2070	5.3	2320	4.1	1050	4.4	1320	2.9	278	2.8	241	4.7	1620	4.0	965	3.1	365	3.4	525
13.	5.4	2450			4.7	1620	4.5	1420	3.9	885	4.0	965	2.9	278	3.2	415	4.0	965	3.3	470	3.1	365	3.3	470
14,	4.6	1520	3.0	320	4.5	1420	4.0	965	4.4	1320	3.6	660	2.9	278	3.0	320	3.5	590	3.0	320	3.2	415	3.2	415
15,	4.1	1050			4.4	1320	4.0	965	4.6	1520	3.3	470	2.8	241	3.9	885	3.2	415	2.9	278	3.1	365	3.2	415
16,	3.8	805	3.0	320	4.5	1420	3.6	660	4.0	965	3.1	365	2.6	181	3.6	660	3.2	415	2.9	278	3.2	415	3.2	415
17,	3.6	660			5.4	2450	3.6	660	3.8	805	3.1	365	2.5	157	3.3	470	3.0	320	2.8	241	3.2	415	3.0	320
18,	3.6	660	3.0	320	5.9	3170	3.7	730	3.7	730	3.0	320	2.4	134	3.0	320	2.9	278	2.7	210	3.1	365	3.0	320
19,	3.4	525			8.4	8190	3.5	590	3.5	590	3.7	730	2.5	157	2.8	241	2.8	241	3.7	730	3.0	320	3.0	320
20,	3.5	590			7.0	5160	3.4	525	3.3	470	3.2	415	3.0	320	2.7	210	2.7	210	6.0	3330	3.0	320	2.9	278
21,	3.5	590	3.4	525	8.6	8650	4.8	1730	3.2	415	4.2	1140	2.8	241	2.7	210	2.6	181	4.6	1520	2.9	278	4.9	1840
22,	3.3	470			7.0	5160	5.3	2320	3.0	320	5.8	3010	2.9	278	2.6	181	2.5	157	4.1	1050	2.8	241	4.5	1420
23,	3.2	415			6.3	3840	4.6	1520	2.9	278	4.9	1840	2.7	210	2.5	157	2.4	134	3.9	885	2.8	241	4.3	1230
24,	3.3	470			5.0	1950	4.2	1140	2.9	278	4.4	1320	3.1	365	2.4	134	2.4	134	3.7	730	2.8	241	4.1	1050
25,	3.0	320			5.4	2450	3.8	805	2.7	210	4.0	965	2.8	241	3.5	590	2.3	113	3.8	805	3.0	320	3.6	660
26,	2.7	210			5.5	2580	3.6	660	2.7	210	3.7	730	2.6	181	3.0	320	2.3	113	4.0	965	2.9	278	3.7	730
27,	3.0	320			4.9	1840	3.6	660	2.8	241	3.4	525	2.6	181	2.7	210	2.3	113	3.7	730	2.8	241	3.6	660
28,	3.0	320			4.5	1420	3.4	525	2.6	181	3.2	415	2.5	157	2.6	181	2.3	113	3.5	590	2.9	278	3.7	730
29,	3.0	320			4.0	965	3.3	470	2.5	157	3.0	320	3.7	730	2.6	181	2.2	92	3.3	470	7.7	6630	6.5	4200
30,	3.0	320			4.0	965	3.2	415	2.6	181	2.9	278	4.3	1230	2.5	157	2.2	92	3.1	365	7.0	5160	5.1	2070
31,	*3.0	320			3.6	660			3.1	365			4.7	1620	2.4	134			3.1	365			4.4	1320

Creek frozen Jan. 31 to Mar. 7, inclusive.
†Approximate.
*Estimated.

ESTIMATED MONTHLY DISCHARGE OF BLACK LICK CREEK, AT BLACK LICK, INDIANA COUNTY, PA.

1907. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,			3.5	590	3.25	442	3.75	768	3.5	590	2.85	260	3.45	558	2.35	96	2.1	38	3.45	558	3.1	365	2.9	280
2,			3.45	558	4.5	1420	3.55	625	3.4	525	4.15	1095	3.2	415	2.35	96	2.5	140	3.15	390	3.3	470	2.9	280
3,			4.25	1185	4.4	1320	3.4	525	3.25	442	3.6	660	3.0	320	2.3	83	3.6	660	3.0	320	5.25	2255	2.8	240
4,			3.9	885	3.85	845	3.45	558	3.75	768	3.35	498	2.85	260	2.35	96	3.5	590	4.6	1520	4.95	1895	2.8	240
5,			3.65	695	3.7	730	3.5	590	3.85	845	3.55	625	2.7	205	2.3	83	3.15	390	4.8	1730	4.45	1370	2.8	240
6,			3.55	625	3.65	695	3.35	498	3.7	730	3.7	730	2.65	188	2.45	125	2.95	300	4.0	965	4.2	1140	2.7	205
7,			3.95	925	3.4	525	3.2	415	3.8	805	3.55	625	2.95	300	2.55	156	2.75	222	3.6	660	5.75	2935	2.7	205
8,	4.65	1570	4.85	1785	3.55	625	3.3	470	3.7	730	3.35	498	3.1	365	2.4	110	2.6	172	4.3	1230	4.95	1895	2.7	205
9,	4.95	1895	4.7	1620	3.4	525	3.35	498	4.25	1185	3.15	390	2.75	222	2.3	83	2.55	156	4.3	1230	4.65	1570	2.75	222
10,	4.8	1730	4.7	1620	3.45	558	3.4	525	4.35	1275	3.0	320	2.7	205	2.5	140	2.65	188	3.8	805	4.25	1185	4.35	1275
11,	4.4	1320	4.65	1570	3.45	558	3.3	470	4.1	1050	3.25	442	2.65	188	2.45	125	4.8	1730	3.55	625	3.95	925	5.4	2450
12,	6.1	3500	4.6	1520	3.65	695	3.35	498	3.75	768	4.6	1520	3.1	365	2.35	96	4.6	1520	3.6	660	3.7	730	4.4	1320
13,	6.1	3500	4.6	1520	12.0	15800	3.45	558	3.65	695	4.15	1095	3.1	365	2.3	83	3.65	695	3.45	558	3.45	558	3.85	845
14,	8.4	8190	4.6	1520	13.2	19500	3.55	625	3.45	558	5.9	3170	2.75	222	2.25	71	3.25	442	3.15	390	3.35	498	3.85	845
15,	7.1	5360	4.6	1520	8.0	7290	3.5	590	3.35	498	4.75	1675	2.6	172	2.2	59	3.05	342	3.0	320	3.15	390	3.9	885
16,	5.85	3090	4.6	1520	5.95	3250	3.85	845	3.4	525	4.2	1140	2.5	140	2.2	59	2.85	260	2.95	300	3.05	342	3.75	768
17,	5.2	2190	4.35	1275	5.4	2450	3.9	885	3.3	470	3.8	805	2.55	156	2.2	59	2.85	260	2.85	260	3.0	320	3.55	625
18,	4.8	1730	4.05	1008	5.65	2790	3.7	730	3.15	390	3.55	625	2.65	188	2.2	59	2.95	300	2.8	240	3.0	320	3.5	590
19,	9.4	10510	3.95	925	6.2	3670	3.65	695	3.1	365	3.35	498	2.6	172	2.15	48	3.25	442	2.7	205	3.2	415	3.35	498
20,	8.1	7510	4.25	1185	9.0	9570	3.6	660	3.05	342	3.25	442	2.5	140	2.1	38	3.25	442	2.7	205	3.1	365	3.15	390
21,	5.85	3090	4.05	1008	6.1	3500	3.6	660	2.95	300	3.15	390	2.45	125	2.15	48	3.25	442	2.75	222	3.1	365	3.05	342
22,	4.8	1730	3.75	768	5.05	2010	3.5	590	2.9	280	3.0	320	2.4	110	2.15	48	3.7	730	2.7	205	3.1	365	3.05	342
23,	4.15	1095	3.6	660	4.6	1520	3.4	525	2.8	240	3.3	470	2.35	96	2.15	48	3.55	625	2.6	172	3.0	320	6.6	4390
24,	3.7	730	3.5	590	4.2	1140	4.4	1320	2.8	240	3.0	320	2.35	96	2.45	125	3.55	625	2.6	172	3.0	320	7.25	5675
25,	4.05	1008	3.4	525	3.95	925	4.1	1050	2.8	240	2.9	280	2.5	140	2.65	188	3.3	470	2.6	172	3.0	320	5.45	2515
26,	3.8	805	3.45	558	3.85	845	3.9	885	2.95	300	2.9	280	2.85	260	2.45	125	3.05	342	2.5	140	3.0	320	4.75	1675
27,	3.35	498	3.35	498	5.15	2130	3.75	768	3.05	342	3.0	320	2.95	300	2.3	83	2.9	280	2.8	240	3.0	320	4.35	1275
28,	3.65	695	3.55	625	5.0	1950	3.55	625	3.05	342	2.85	260	2.75	222	2.25	71	2.85	260	4.6	1520	2.95	300	4.55	1470
29,	3.95	925			4.65	1570	3.45	558	2.85	260	2.75	222	2.55	156	2.2	59	3.65	695	3.95	925	2.9	280	4.85	1785
30,	3.8	805			4.3	1230	3.4	525	2.75	222	3.55	625	2.4	110	2.2	59	3.8	805	3.5	590	2.9	280	4.40	1320
31,	3.6	660			3.95	925			2.7	205			2.35	96	2.15	48			3.25	442			4.3	1230

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF BLACK LICK CREEK, AT BLACK LICK, INDIANA COUNTY, PA.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.95	925	3.25	442	3.6	660	4.35	1280	4.35	1280	3.55	625	2.4	110	2.3	83	2.08	35	2.08	35	2.08	35	2.08	25
2,	3.75	768	*4.45	1370	6.9	4960	4.25	1180	4.15	1100	3.35	498	2.45	125	2.3	83	2.08	35	2.08	35	2.08	25	2.08	35
3,	3.55	625	4.6	1520	6.2	3670	4.1	1050	4.4	1320	3.15	390	2.5	140	2.3	83	2.08	35	2.08	35	1.98	18	1.98	18
4,	3.40	525	4.75	1680	5.35	2380	3.85	845	4.05	1010	3.0	320	2.5	140	2.3	83	2.08	35	2.08	35	2.03	26	2.03	26
5,	3.75	768	4.35	1280	5.05	2010	3.7	730	4.15	1100	2.9	280	2.5	140	2.2	59	2.08	35	2.03	26	2.08	25	2.08	35
6,	3.35	498	4.0	965	8.35	8080	3.8	805	4.55	1470	2.8	240	2.35	96	2.4	110	1.98	18	1.98	18	2.08	35	2.08	35
7,	3.3	470	3.65	695	9.15	9920	3.75	768	5.85	3090	2.7	205	2.4	110	2.55	156	1.98	18	1.98	18	2.08	35	2.3	83
8,	3.35	498	3.3	470	6.5	4200	4.35	1280	5.8	3010	2.65	188	2.4	110	2.65	188	1.98	18	1.98	18	2.08	35	2.45	125
9,	3.3	470	3.15	390	6.45	4110	5.8	3010	5.0	1950	2.7	205	2.35	96	2.55	156	1.98	18	1.98	18	2.08	25	2.45	125
10,	3.2	415	3.05	342	5.45	2510	4.95	1900	4.7	1620	3.4	525	2.3	83	2.35	96	1.98	18	1.98	18	2.08	35	2.3	83
11,	3.35	498	2.95	300	5.0	1950	5.15	2130	4.2	1140	3.0	320	2.2	59	2.55	156	1.98	18	1.98	18	2.08	35	2.3	83
12,	4.35	1280	3.05	342	5.2	2190	4.5	1420	3.95	925	2.8	240	2.3	83	2.4	110	1.88	6	1.98	18	2.08	35	2.5	140
13,	6.8	4770	3.9	885	5.45	2510	4.25	1180	3.75	768	2.65	188	2.3	83	2.35	96	1.98	18	1.98	18	2.18	55	2.6	172
14,	5.3	2320	5.3	2320	6.1	3500	3.9	885	3.6	660	2.6	172	2.35	96	2.3	83	1.98	18	1.98	18	2.18	55	2.4	110
15,	4.55	1470	10.0	11900	5.8	3010	3.85	845	4.55	1470	3.05	342	2.55	156	2.1	38	1.93	12	1.98	18	2.18	55	2.4	110
16,	4.35	1280	7.5	6200	6.1	3500	4.45	1370	4.75	1680	3.15	390	2.45	125	2.2	59	1.88	6	1.98	18	2.18	55	2.2	59
17,	3.9	885	5.45	2520	5.2	2190	4.0	965	6.9	4960	2.85	260	2.4	110	2.2	59	1.88	6	1.98	18	2.18	55	2.45	125
18,	3.75	768	4.55	1470	6.2	3670	3.95	925	5.9	3170	2.7	205	2.3	83	2.45	125	1.88	6	1.98	18	2.18	55	5.7	2860
19,	3.6	660	4.3	1230	10.8	13800	5.9	3170	6.2	3670	2.6	172	2.3	83	2.45	125	1.88	6	1.98	18	2.18	55	4.7	1620
20,	3.5	590	4.05	1010	6.65	4480	4.9	1840	7.0	5160	3.1	365	2.3	83	2.25	71	1.88	6	1.98	18	2.18	55	3.7	770
21,	3.5	590	3.75	768	5.35	2380	4.4	1320	5.4	2450	3.15	390	2.4	110	2.25	71	1.88	6	1.98	18	2.18	55	3.05	342
22,	3.9	885	3.7	730	4.7	1620	4.05	1010	4.75	1680	3.0	320	3.6	660	2.20	59	1.88	6	1.98	18	2.18	55	2.85	260
23,	3.9	885	3.35	498	4.4	1320	3.85	845	4.4	1320	2.85	260	2.7	205	2.75	222	1.88	6	1.98	18	2.18	55	2.65	188
24,	3.6	660	3.4	525	4.5	1420	3.65	695	4.0	965	2.7	205	3.6	660	2.55	156	1.88	6	1.98	18	2.18	55	2.7	205
25,	3.55	625	3.35	498	4.1	1050	3.55	625	3.65	695	2.85	260	4.35	1280	2.3	83	1.88	6	1.98	18	2.08	35	3.08	356
26,	3.45	558	3.4	525	3.85	845	3.85	845	3.5	590	2.85	260	3.2	415	2.3	83	1.88	6	1.98	18	2.08	35	2.95	300
27,	4.15	1100	3.35	498	3.7	730	3.65	695	3.5	590	2.65	188	2.9	280	2.3	83	1.88	6	1.98	18	2.08	35	2.6	172
28,	3.95	925	3.15	390	3.8	805	3.45	558	3.4	525	2.6	172	2.65	188	2.2	59	1.93	12	2.08	35	2.08	35	2.75	222
29,	3.75	768	3.15	390	4.95	1900	3.3	470	3.3	470	2.6	172	2.5	140	2.2	59	2.08	35	2.08	35	2.08	35	2.7	205
30,	3.4	525	-----	-----	4.95	1900	3.4	525	3.2	415	2.5	140	2.4	110	2.05	30	2.08	35	2.08	35	2.08	35	2.65	188
31,	3.2	415	-----	-----	4.55	1470	-----	-----	3.75	768	-----	-----	2.2	59	2.1	38	-----	-----	2.08	35	-----	-----	3.25	442

*Creek frozen.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF BLACK LICK CREEK, AT BLACK LICK, INDIANA COUNTY, PA.

1909.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.1	365	3.1	365	4.2	1140	3.65	695	§7.85	6960	2.6	172	2.8	240	2.87	268	2.17	53	2.07	33	2.17	53	2.27	76
2,	2.75	222	3.05	342	†7.13	5423	3.6	660	6.45	4110	2.7	205	2.7	205	2.62	179	2.17	53	1.97	17	2.17	53	2.27	76
3,	2.95	300	3.1	365	6.75	4675	3.6	660	5.4	2450	2.8	240	2.65	188	2.42	116	2.17	53	1.97	17	2.27	76	2.23	66
4,	3.3	470	3.1	365	6.45	4110	3.55	625	5.75	2935	3.15	390	2.65	188	2.37	102	2.17	53	1.97	17	2.32	88	2.27	76
5,	3.75	768	3.5	590	5.15	2130	3.35	498	4.95	1895	3.6	660	2.5	140	2.27	76	2.17	53	1.97	17	2.27	76	2.23	66
6,	4.4	1320	4.5	1420	4.65	1570	3.75	768	4.65	1570	3.9	885	2.4	110	2.27	76	2.17	53	1.97	17	2.27	76	2.23	66
7,	3.85	845	4.15	1095	4.45	1370	5.9	3170	4.25	1185	3.4	525	2.4	110	2.27	76	2.17	53	1.97	17	2.17	53	2.41	113
8,	3.4	525	3.85	845	4.45	1370	4.7	1620	3.95	925	3.15	390	2.3	83	2.27	76	2.17	53	1.97	17	2.22	64	2.57	162
9,	3.4	525	3.75	768	4.6	1520	4.45	1870	3.75	768	3.7	730	2.3	83	2.27	76	2.07	33	1.97	17	2.42	116	2.45	125
10,	3.2	415	4.05	1008	5.0	1950	4.1	1050	3.6	660	5.2	2190	2.25	71	2.17	53	2.07	33	1.97	17	2.43	119	2.39	107
11,	3.35	498	4.0	965	4.75	1675	3.85	845	3.7	730	6.25	3755	2.25	71	2.17	53	2.07	33	2.17	53	2.37	102	2.42	116
12,	3.5	590	3.75	768	4.25	1185	3.7	730	3.55	625	4.8	1730	2.3	83	2.17	53	2.07	33	2.82	248	2.33	91	2.33	91
13,	3.3	470	4.5	1420	4.1	1050	3.7	730	3.35	498	4.2	1140	2.25	71	2.07	33	2.07	33	2.62	179	2.26	73	2.50	140
14,	3.3	470	4.7	1620	4.0	965	6.57	4333	3.2	415	4.1	1050	2.40	110	2.07	33	1.97	17	2.42	116	2.24	69	4.26	1194
15,	5.05	2010	5.4	2450	3.7	730	5.25	2255	3.05	342	3.65	695	2.3	83	2.17	53	1.97	17	2.22	64	2.23	66	3.57	639
16,	4.8	1730	6.23	3721	3.6	660	4.6	1520	3.1	365	3.4	525	2.25	71	2.62	179	2.02	24	2.27	76	2.35	96	3.09	360
17,	3.95	925	5.8	3010	3.45	558	4.2	1140	3.0	320	3.25	442	2.3	83	2.82	248	2.07	33	2.17	53	2.43	119	2.83	252
18,	3.85	845	4.85	1785	3.35	498	3.95	925	2.9	280	3.2	415	2.25	71	2.62	179	2.07	33	2.17	53	2.45	125	2.85	260
19,	3.55	625	4.45	1370	3.5	590	3.75	768	2.8	240	3.15	390	2.2	59	2.42	116	1.97	17	2.17	53	2.37	102	2.63	182
20,	3.6	660	4.75	1675	3.85	845	3.65	695	2.7	205	2.9	280	2.15	48	2.32	88	1.97	17	2.17	53	2.33	91	2.63	182
21,	3.45	558	4.6	1520	3.75	768	4.05	1008	3.05	342	2.8	240	2.15	48	2.27	76	1.97	17	2.22	64	2.29	81	2.65	188
22,	3.75	768	4.55	1470	3.55	625	5.65	2790	3.05	342	2.8	240	2.2	59	2.27	76	1.97	17	2.27	76	2.29	81	2.59	169
23,	4.65	1570	5.1	2070	3.45	558	5.2	2190	2.9	280	2.8	240	∫3.68	716	2.17	53	2.02	24	2.37	102	2.35	96	2.57	162
24,	5.45	2515	*8.63	8719	3.4	525	4.85	1785	2.8	240	3.05	342	3.2	415	2.17	53	2.12	42	2.97	308	2.46	128	2.52	146
25,	4.65	1570	6.55	4295	4.45	1370	4.3	1230	2.65	188	3.0	320	2.7	205	2.17	53	2.17	53	2.92	288	2.43	119	2.54	153
26,	4.2	1140	5.35	2385	4.8	1730	4.6	1520	2.7	205	2.9	280	2.5	140	2.17	53	2.17	53	2.62	179	2.38	105	2.53	150
27,	3.85	845	4.8	1730	4.75	1675	4.25	1185	2.7	205	2.9	280	2.45	125	2.17	53	2.07	33	2.47	131	2.35	96	2.53	150
28,	3.65	695	4.55	1470	4.55	1470	4.5	1420	3.05	342	3.62	674	2.35	96	2.17	53	2.07	33	2.42	116	2.31	86	2.5	140
29,	3.5	590	------	------	4.25	1185	4.6	1520	2.95	300	3.55	625	2.3	83	2.17	53	2.07	33	2.32	88	2.29	81	2.55	156
30,	3.35	498	------	------	3.95	925	‡7.2	5570	2.65	188	3.05	342	2.7	205	2.17	53	2.07	33	2.27	76	2.3	83	2.55	156
31,	3.1	365	------	------	3.85	845	------	------	2.7	205	------	------	3.27	454	2.17	53	------	------	2.17	53	------	------	2.49	137

*Max. at noon, 8.8 = 9110 sec.-ft.
†Max. 7.5 at noon-6200 sec.-ft.
‡Max. 7.5 at 6:00 p. b., 6200 sec.-ft.
§Max. 8.0 at 6:00 p. m., 7290 sec.-ft.
∫Max, 4.0 at noon, 965 sec.-ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF BLACK LICK CREEK, AT BLACK LICK, INDIANA COUNTY, PA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.44	122	3.57	639	8.28	7914	2.88	272	3.63	681	3.34	492	2.46	128	2.12	42	2.02	24	2.28	78	2.26	73	3.08	356
2,	2.87	268	3.44	551	7.28	5738	2.82	248	3.42	538	3.49	584	2.38	105	2.09	36	2.72	212	2.23	66	2.32	88	2.98	312
3,	4.69	1610	3.63	681	7.06	5280	2.77	230	3.31	492	3.38	514	2.38	105	2.06	31	2.43	119	2.21	61	2.30	83	2.98	312
4,	4.65	1570	3.67	709	6.19	3653	2.74	219	3.40	525	3.22	426	2.33	91	2.05	30	5.19	2178	2.20	59	2.32	88	2.94	296
5,	4.05	1008	3.56	632	5.95	3250	2.76	226	3.21	437	3.14	385	2.30	83	2.04	28	4.16	1104	2.20	59	2.31	86	2.86	264
6,	5.47	2541	3.33	486	5.84	3074	2.74	219	3.10	365	3.79	798	2.28	78	2.04	28	3.74	760	2.18	55	2.28	78	2.78	233
7,	5.15	2130	3.23	432	6.24	3238	2.72	212	3.02	329	3.56	632	2.35	96	2.04	28	3.80	805	2.22	64	2.26	73	2.87	268
8,	5.27	2281	3.32	481	5.10	2070	2.68	198	2.98	312	3.38	514	2.40	110	2.06	31	3.21	420	2.18	55	2.26	73	2.82	248
9,	7.63	6476	3.37	508	4.53	1450	2.66	192	2.99	316	3.22	426	2.34	94	2.03	26	3.08	356	2.20	59	2.24	69	2.78	233
10,	7.19	5549	3.59	653	4.16	1104	2.62	179	3.00	320	3.72	745	2.32	88	2.14	46	2.96	304	2.18	55	2.26	73	2.81	244
11,	6.51	4219	3.55	625	3.95	925	2.56	159	3.01	324	3.84	837	2.28	78	2.30	83	2.84	256	2.18	55	2.30	83	2.88	272
12,	6.33	3894	3.45	558	3.82	821	2.53	150	3.32	481	3.72	745	2.24	69	2.38	105	2.74	219	2.19	57	2.30	83	2.94	296
13,	6.43	4074	3.53	611	3.70	730	2.50	140	3.05	342	3.52	604	2.35	96	2.26	73	3.25	442	2.16	51	2.30	83	2.94	296
14,	6.34	3912	3.49	584	3.83	829	2.50	140	2.92	288	3.37	508	2.40	110	2.19	57	3.14	385	2.13	44	2.28	78	3.10	365
15,	5.52	2608	3.37	508	3.66	702	2.48	134	2.84	256	3.25	442	2.33	91	2.12	42	2.86	264	2.12	42	2.44	122	3.08	356
16,	4.51	1430	†5.37	2411	3.40	525	2.59	169	2.80	240	3.58	646	‖4.56	1480	2.19	57	2.66	192	2.12	42	2.38	105	3.03	324
17,	3.81	813	5.88	3138	3.44	551	2.68	198	2.74	219	3.38	514	4.10	1050	2.18	55	2.54	153	2.12	42	2.38	105	3.01	321
18,	*10.15	12280	5.01	1962	3.34	492	3.41	532	2.92	288	3.23	432	3.22	426	2.20	59	2.46	128	2.10	38	2.40	110	3.00	320
19,	8.35	8075	4.31	1239	3.32	481	3.79	798	3.02	329	3.18	405	2.78	233	2.28	78	2.42	116	2.10	38	2.36	99	3.16	395
20,	5.76	2950	4.05	1008	3.45	558	3.79	798	2.87	268	3.04	338	2.61	175	2.21	61	2.38	105	2.10	38	2.34	94	3.56	632
21,	7.11	5381	4.69	1610	3.66	702	4.54	1460	3.56	632	2.91	284	2.47	131	2.18	55	2.35	96	2.10	38	2.32	88	3.66	702
22,	7.16	5486	5.96	3266	3.54	618	4.24	1176	3.86	853	2.76	226	2.38	105	2.15	48	2.31	86	2.79	236	2.40	110	3.62	674
23,	5.39	2437	5.35	2385	3.44	551	3.88	869	3.56	632	2.72	212	2.34	94	2.10	38	2.29	81	2.77	230	2.41	113	3.54	618
24,	4.81	1741	4.61	1530	3.39	520	3.78	790	3.39	520	2.60	172	2.30	83	2.06	31	2.35	96	2.68	198	2.48	134	4.60	1520
25,	4.37	1293	4.35	1275	3.34	492	§6.03	3781	4.05	1008	2.52	146	2.27	76	2.06	31	2.35	96	2.46	128	2.56	159	4.25	1185
26,	3.97	941	4.07	1024	3.25	442	5.52	2608	3.86	853	2.46	128	2.24	69	2.11	40	2.40	110	2.38	105	2.81	244	3.92	901
27,	5.01	1962	6.01	3347	3.16	395	4.76	1686	3.56	632	2.41	113	2.22	64	2.08	35	2.34	94	2.36	99	2.72	212	3.76	775
28,	4.64	1560	‡9.27	10204	3.02	329	4.27	1203	3.38	514	2.66	192	2.22	64	2.07	33	2.38	105	2.35	96	2.80	240	3.65	695
29,	4.21	1149	------	------	2.96	304	4.00	965	3.22	426	2.79	236	2.18	55	2.05	30	2.48	134	2.32	88	3.57	639	6.00	3330
30,	3.86	853	------	------	2.97	308	3.88	869	3.13	380	2.57	162	2.18	55	2.06	31	2.32	88	2.30	83	3.38	514	7.63	6476
31,	3.79	798	------	------	2.92	288	------	------	3.22	426	------	------	2.15	48	2.03	26	------	------	2.30	83	------	------	5.98	3298

* Max. 10.97 feet at noon—14200 sec.-ft.
† Max. 6.97 feet at noon— 5100 sec.-ft.
‡ Max. 10.17 feet at noon—12300 sec. ft.
§ Max. 6.7 feet at 6.00 p. m.—4580 sec.-ft.
‖ Max. 7.3 feet at 9.00 p. m.—5780 sec.-ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF BLACK LICK CREEK, AT BLACK LICK, INDIANA COUNTY, PA.

1911. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.23	2229	4.58	1500	3.74	760	3.74	760	3.52	604	2.34	94	2.26	73	1.97	17	3.08	356	4.51	1430	3.10	365	3.19	410
2,	5.30	2320	4.30	1230	3.80	805	3.70	730	3.76	775	2.34	94	2.12	42	1.97	17	2.77	230	7.35	5885	3.08	356	3.35	498
3,	5.54	2636	4.00	965	3.60	660	3.72	745	3.54	618	2.36	99	2.10	38	1.99	20	2.58	166	5.43	2489	2.91	284	3.29	465
4,	4.76	1686	4.33	1257	3.56	632	3.75	768	3.32	481	2.30	83	2.14	46	2.17	53	2.44	122	4.73	1653	2.82	248	3.17	400
5,	4.15	1095	4.15	1095	3.28	459	4.92	1862	3.17	400	3.01	324	2.11	40	2.18	55	2.40	110	4.08	1033	2.76	226	2.99	316
6,	4.01	974	3.74	760	3.45	558	5.98	3298	3.10	365	3.18	405	2.10	38	2.43	119	3.08	356	3.72	745	2.84	256	2.99	316
7,	3.88	869	3.69	723	3.44	551	6.02	3364	3.03	334	2.76	226	2.10	38	2.23	66	3.09	360	6.65	4485	3.82	821	3.04	338
8,	3.66	702	3.62	674	3.36	503	5.26	2268	2.98	312	2.64	185	2.26	73	2.15	48	2.74	219	5.11	2082	3.46	564	3.03	334
9,	3.93	909	3.65	695	3.28	459	5.00	1950	2.92	288	2.48	134	2.24	69	2.06	31	2.74	219	4.37	1293	3.24	437	3.33	486
10,	3.56	632	3.44	551	3.62	674	4.86	1796	2.90	280	2.40	110	2.16	51	2.03	26	3.62	674	3.94	917	3.18	405	4.15	1095
11,	3.74	760	3.25	442	3.80	805	4.38	1302	2.87	268	2.36	99	2.18	55	2.01	23	3.04	338	3.86	853	3.16	395	3.79	798
12,	5.24	2232	3.22	426	3.70	730	4.12	1068	2.81	244	2.89	276	2.17	53	1.99	20	2.76	226	3.75	768	3.80	805	3.79	798
13,	6.49	4182	3.38	514	4.17	1113	4.02	982	2.74	219	3.64	688	2.14	46	1.99	20	2.57	162	3.49	584	3.97	941	3.99	957
14,	8.97	9501	3.40	525	3.90	885	4.12	1068	2.67	195	3.16	395	2.12	42	1.99	20	2.49	137	3.31	476	3.66	702	3.85	845
15,	8.31	7983	5.30	2320	3.72	745	4.68	1600	2.63	182	2.78	233	2.10	38	1.97	17	7.86	6982	5.02	1974	3.60	600	5.22	2216
16,	6.04	3398	4.60	1520	3.44	551	4.32	1248	2.58	166	2.62	179	2.08	35	1.95	14	6.53	4257	4.61	1530	3.65	695	6.20	3670
17,	4.83	1763	4.29	1221	3.54	618	4.07	1024	2.56	159	2.52	146	2.04	28	2.09	36	4.70	1620	4.14	1086	3.41	551	5.58	2692
18,	4.20	1140	5.12	2094	3.63	681	3.82	821	2.56	159	2.46	128	2.04	28	2.21	61	4.00	965	5.87	3122	5.13	2106	4.77	1697
19,	4.10	1050	5.20	2190	3.66	702	3.68	716	2.52	146	2.45	125	2.03	26	2.11	40	3.72	745	4.87	1807	4.81	1741	4.33	1257
20,	3.84	837	4.66	1580	4.22	1158	4.76	1686	2.56	159	2.40	110	2.00	21	2.03	26	3.53	611	4.35	1275	4.30	1230	3.95	925
21,	3.78	790	4.20	1140	3.94	917	4.58	1500	2.55	156	2.34	94	2.10	38	2.00	21	3.22	426	3.97	941	4.02	982	3.83	829
22,	3.96	933	3.78	790	3.83	829	4.59	1510	2.50	140	2.28	78	2.08	35	1.99	20	4.60	1520	3.73	752	3.80	805	3.81	813
23,	3.64	688	3.78	790	4.03	990	5.20	2190	2.44	122	2.22	64	2.09	36	2.05	30	3.66	702	3.79	798	3.63	681	4.73	1653
24,	3.26	448	3.62	674	3.68	716	4.76	1686	2.58	166	2.18	55	2.12	42	2.06	31	3.32	481	3.58	646	3.82	821	4.25	1185
25,	3.40	525	3.58	646	3.54	618	4.35	1275	2.57	162	2.28	78	2.20	59	2.12	42	3.08	356	3.35	498	3.78	790	4.05	1008
26,	3.58	646	3.90	885	3.50	590	4.04	999	2.44	122	2.73	216	2.17	53	2.25	71	3.06	347	3.21	420	3.56	632	4.01	971
27,	3.96	933	4.43	1350	3.78	790	3.82	821	2.40	110	2.75	222	2.12	42	2.43	119	3.10	365	3.13	380	3.51	597	5.13	2106
28,	6.07	3149	4.10	1050	3.80	805	3.60	660	2.34	94	2.54	153	2.10	38	3.10	365	4.42	1340	3.10	365	3.49	584	4.42	1340
29,	5.06	2022	-----	-----	3.61	667	3.46	564	2.30	83	2.46	128	2.08	35	3.26	418	5.00	1950	3.00	320	3.59	653	3.93	909
30,	6.50	4200	-----	-----	3.79	798	3.55	625	2.34	94	2.34	94	2.04	28	3.86	853	5.25	2255	2.95	300	3.46	564	3.87	861
31,	5.06	2022	-----	-----	3.88	869	-----	-----	2.40	110	-----	-----	2.00	21	3.19	410	-----	-----	3.03	334	-----	-----	4.82	1752

ESTIMATED MONTHLY DISCHARGE OF BLACK LICK CREEK, AT BLACK LICK, INDIANA COUNTY.

(Drainage area 386 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1904.					
September,	102	34	55	0.142	0.158
October,	196	28	92	.238	.275
November,	113	37	66	.171	.191
December,	4960	64			
1905.					
January,	2450	210	652	1.689	1.947
April,	3500	320	918	2.378	2.653
May,	1520	157	480	1.244	1.434
June,	3170	210	834	2.161	2.411
July,	1620	134	412	1.067	1.230
August,	1050	134	350	.907	1.046
September,	4200	73	384	.995	1.110
October,	3330	55	538	1.394	1.607
November,	6630	241	776	2.010	2.243
December,	13600	278	1735	4.495	5.182
1907.					
February,	1785	498	1046	2.710	2.822
March,	19500	442	2936	7.606	8.769
April,	1320	415	651	1.687	1.882
May,	1275	205	533	1.381	1.592
June,	3170	222	687	1.780	1.986
July,	558	96	221	0.573	0.661
August,	188	38	86	0.223	0.257
September,	1730	38	485	1.256	1.402
October,	1730	140	580	1.503	1.733
November,	2935	280	771	1.997	2.228
December,	5675	205	1117	2.894	3.336
1908.					
January,	4770	415	917	2.376	2.739
February,	11900	300	1454	3.767	4.063
March,	13800	660	3185	8.251	9.512
April,	3170	470	1172	3.036	3.388
May,	5160	415	1646	4.264	4.916
June,	625	140	283	.733	.818
July,	1280	59	201	.521	.601
August,	222	30	96	.249	.287
September,	35	6	16	.041	.046
October,	35	18	23	.060	.069
November,	55	18	42	.109	.122
December,	2860	18	306	.793	.914
The year,	13800	6	778	2.017	27.475

ESTIMATED MONTHLY DISCHARGE OF BLACK LICK CREEK, AT BLACK LICK, INDIANA COUNTY.

(Drainage area 386 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1909.					
January,	2515	222	829	2.148	2.477
February,	9110	342	1772	4.591	4.781
March,	6200	498	1474	3.819	4.403
April,	6200	498	1509	3.909	4.361
May,	7290	188	978	2.534	2.921
June,	3755	172	680	1.762	1.966
July,	965	48	152	0.394	0.454
August,	268	33	89	0.231	0.266
September,	53	17	36	0.093	0.104
October,	308	17	84	0.218	0.252
November,	128	53	89	0.231	0.258
December,	1194	66	195	0.505	0.582
The year,	9110	17	657	1.703	22.825
1910.					
January,	14200	122	2949	7.640	8.808
February,	12300	432	1538	3.984	4.148
March,	7914	288	1559	4.039	4.657
April,	4580	134	681	1.764	1.968
May,	1008	219	459	1.189	1.371
June,	837	113	432	1.119	1.249
July,	5780	48	182	.472	.544
August,	105	26	45	.117	.135
September,	2178	24	318	.824	.919
October,	236	38	79	.205	.236
November,	639	69	140	.363	.405
December,	6476	233	856	2.218	2.557
The year,	14200	24	770	1.994	26.997
1911.					
January,	9501	448	2050	5.311	6.123
February,	2320	426	1057	2.738	2.851
March,	1158	459	730	1.891	2.180
April,	3364	564	1363	3.518	3.925
May,	775	83	249	.645	.744
June,	688	55	177	.459	.512
July,	73	21	42	.109	.126
August,	853	14	101	.262	.302
September,	6982	110	953	2.469	2.755
October,	5885	300	1330	3.446	3.973
November,	2106	226	697	1.806	2.015
December,	3670	316	1095	2.837	3.271
The year,	9501	14	820	2.124	28.777

LOYALHANNA CREEK.

DESCRIPTION OF BASIN.

Loyalhanna creek, an important tributary of the Kiskiminetas river, draining an area of approximately 300 square miles, rises in the southern part of Westmoreland county, Pa., and flows in a northerly direction, for a distance of about 45 miles, to its mouth, at the junction of the Conemaugh and Kiskiminetas rivers. In the upper watershed it flows through a narrow valley between Chestnut and Laurel Ridges, the course being very circuitous, for a distance of about 15 miles, at which point it breaks through Chestnut Ridge into a succession of wide, flat, bottom lands, well populated by a coal mining and agricultural community, the hills becoming low and rolling. The fall of the creek, from the foot of Chestnut Ridge to its mouth, a distance of approximately 27 miles, is rather uniform at the rate of about six feet per mile. In the gap through Chestnut Ridge the creek falls 100 feet in a distance of four miles, or at the rate of 25 feet per mile. There are numerous large tributaries at the headwaters of this stream, but in its lower reaches they become much smaller and are of little importance. The stream is polluted by mine waste from Chestnut Ridge to its mouth. There are numerous towns in this watershed, the largest of which are Latrobe and Ligonier.

Loyalhanna creek and several of its tributaries are used for commercial and industrial water supply purposes.

The mean annual precipitation over the upper watershed is from 45 to 50 inches, while the lower portion is from 35 to 45 inches.

OHIO BASIN—STATION NO. 18.

LOYALHANNA CREEK NEAR NEW ALEXANDRIA, PA.

DESCRIPTION OF STATION.

This station was established on October 7th, 1910, by the Flood Commission of Pittsburg, and is located on the single span, steel, through-truss, highway bridge about one and one-half miles below New Alexandria, Westmoreland county, Pa.

The channel is straight for one hundred feet above and one thousand feet below the station. The right bank is high and does not overflow, while the left bank overflows during extreme high stages. The bed is gravelly and is permanent.

Discharge measurements are taken from the downstream side of the bridge and by wading either above or below the station during low water. The initial point for soundings is top edge of left abutment, 1.8 feet from end of hand-rail, downstream side of bridge.

A chain gage is fastened to the floor of the bridge, eighty-seven feet from the initial point for soundings, downstream side. The length of the chain from the bottom of the weight to the marker is 24.11 feet. The elevation of zero is 909.34 feet. Bench mark No. 1 is bridge seat, west side, north abutment; elevation 932.89 feet or 23.55 feet above gage datum. The gage is read by S. A. Hollis.

Since the establishment of this station ten discharge measurements have been made.

The following data have been furnished by the Flood Commission of Pittsburg:

DISCHARGE MEASUREMENTS OF LOYALHANNA CREEK, NEAR NEW ALEXANDRIA, WESTMORELAND COUNTY, PENNA.

(Drainage area 270 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.	
	1910.							
1	Oct. 6,	Drake,	27	17	1.00	1.38	17	Wading msmt.
2	Nov. 29,	do.	120	366	1.44	3.00	527	
3	Nov. 29,	Sykes,	120	357	1.43	2.92	509	
4	Nov. 30,	Drake,	110	295	0.92	2.45	272	
5	Dec. 30,	Sykes,	146	772	3.90	6.03	3011	
6	Dec. 30,	do.	146	727	3.72	5.71	2702	
7	Dec. 30,	do.	144	690	3.78	5.53	2612	
	1911.							
8	Jan. 17,	Sykes,	136	585	3.07	4.74	1798	
9	Mar. 3,	Drake,	119	352	1.19	2.74	418	
	1912.							
10	July 31,	Boehringer,	126	375	2.00	3.30	750	

DISCHARGE TABLE FOR LOYALHANNA CREEK, NEAR NEW ALEXANDRIA, WESTMORELAND COUNTY, FROM OCT. 7, 1910, TO DEC. 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.30	6	.60	346	.80	1070	.90	1950	6.00	3010
.40	16	.70	392	.90	1145	5.00	2035	.10	3120
.50	30	.80	440	4.00	1220	.10	2125	.20	3230
.60	46	.90	492	.10	1295	.20	2215	.30	3340
.70	64	3.00	547	.20	1375	.30	2310	.40	3450
.80	84	.10	604	.30	1455	.40	2405	.50	3560
.90	108	.20	664	.40	1535	.50	2500	.60	3675
2.00	134	.30	727	.50	1615	.60	2600	.70	3790
.10	162	.40	792	.60	1695	.70	2700	.80	3905
.20	193	.50	860	.70	1780	.80	2800	.90	4020
.30	228	.60	930	.80	1865	.90	2905	7.00	4135
.40	264	.70	1000						
.50	304								

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LOYALHANNA CREEK, NEAR NEW ALEXANDRIA, WESTMORELAND COUNTY, PA.

1910. Day.	OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.
1,			1.46	24	2.10	162
2,			1.46	24	2.00	134
3,			1.46	24	2.00	134
4,			1.46	24	2.00	134
5,			1.46	24	2.00	134
6,			1.46	24	2.10	162
7,	1.38	14	1.56	40	1.70	64
8,	1.38	14	1.56	40	1.69	62
9,	1.38	14	1.66	57	1.69	62
10,	1.38	14	1.76	76	1.79	82
11,	1.38	14	1.75	74	1.79	82
12,	1.38	14	1.75	74	1.79	82
13,	1.38	14	1.75	74	1.79	82
14,	1.38	14	1.75	74	1.79	82
15,	1.38	14	1.85	96	1.89	106
16,	1.38	14	1.85	96	1.89	106
17,	1.38	14	1.75	74	1.79	82
18,	1.38	14	1.75	74	1.79	82
19,	1.38	14	1.75	74	1.79	82
20,	1.38	14	1.85	96	1.79	82
21,	1.36	12	1.85	96	1.79	82
22,	1.36	12	1.80	84	1.79	82
23,	2.16	181	1.65	55	1.89	106
24,	2.16	181	1.65	44	1.80	106
25,	1.66	57	1.95	121	1.89	106
26,	1.66	57	2.05	148	1.99	131
27,	1.56	40	2.05	148	1.99	131
28,	1.66	57	2.15	178	2.29	224
29,	1.66	57	3.00	547	6.49	3550
30,	1.66	57	2.45	284	5.99	3000
31,	1.46	24			3.89	1140

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LOYALHANNA CREEK, NEAR NEW ALEXANDRIA, WESTMORELAND COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.88	482	-----	-----	2.80	440	2.70	392	2.70	392	2.00	134	2.10	162	1.40	16	2.60	346	2.80	440	2.25	210	2.65	369
2,	2.88	482	-----	-----	*2.80	440	2.70	392	3.20	664	2.00	134	2.10	162	1.50	30	*2.35	246	3.90	1140	2.20	193	2.65	369
3,	2.78	430	-----	-----	2.70	392	2.60	346	2.80	440	1.90	108	1.80	84	1.70	64	2.10	162	3.30	727	*2.10	162	2.55	325
4,	2.78	430	-----	-----	2.70	392	2.70	392	2.60	346	1.70	64	1.80	84	1.60	46	2.00	134	2.30	228	2.10	162	*2.60	346
5,	2.78	430	-----	-----	2.50	304	4.20	1380	2.60	346	1.90	108	1.80	84	1.80	84	1.90	108	3.10	604	2.05	148	2.70	392
6,	2.68	383	-----	-----	2.60	346	4.70	1780	2.40	264	2.50	304	1.70	64	1.50	30	1.80	84	3.00	547	2.05	148	2.55	325
7,	2.68	383	-----	-----	2.90	492	4.40	1540	2.40	264	2.40	264	1.60	46	1.50	30	2.20	193	*3.05	576	3.10	604	2.45	284
8,	2.68	383	-----	-----	2.60	346	4.10	1300	2.30	228	2.20	193	2.20	193	1.50	30	2.00	134	3.10	604	2.95	520	2.35	246
9,	2.68	383	-----	-----	2.80	440	4.20	1380	2.30	228	2.10	162	1.80	84	1.40	16	2.00	134	2.10	162	*2.95	520	2.35	246
10,	2.78	430	-----	-----	2.90	492	4.10	1300	2.30	228	2.10	162	1.60	46	1.30	6	2.80	440	*2.50	304	2.85	466	2.70	392
11,	2.78	430	-----	-----	3.10	604	3.70	1000	2.70	392	2.00	134	1.60	46	1.40	16	2.50	304	3.10	604	2.35	246	2.85	466
12,	2.88	482	-----	-----	3.10	604	3.30	727	2.40	264	2.30	228	1.90	108	1.30	6	3.10	604	2.90	492	2.50	304	2.85	466
13,	2.88	482	-----	-----	3.00	547	3.10	604	2.20	193	2.00	134	3.50	860	1.30	6	3.00	547	2.70	392	2.85	466	2.85	466
14,	2.98	536	-----	-----	3.00	547	2.90	492	2.20	193	2.00	134	2.30	228	1.50	30	*5.00	2040	2.70	392	2.60	346	2.95	520
15,	5.98	2990	-----	-----	2.90	492	3.50	860	2.10	162	2.00	134	2.00	134	1.60	46	†10.05	‡8200	4.60	1700	2.65	369	3.60	930
16,	3.98	1210	-----	-----	2.70	392	3.10	604	2.10	162	1.90	108	1.90	108	1.60	46	7.90	‡5200	3.60	930	2.75	416	3.95	1180
17,	*3.58	916	-----	-----	2.50	304	2.90	492	2.10	162	1.90	108	1.80	84	1.60	46	5.30	2310	3.00	547	2.70	392	4.25	1420
18,	*3.28	714	-----	-----	2.80	440	2.80	440	2.10	162	2.00	134	1.80	84	1.60	46	*4.25	1420	5.50	2500	3.05	576	3.55	895
19,	*2.98	536	-----	-----	2.70	392	2.70	392	2.00	134	2.00	134	1.70	64	1.60	46	3.20	664	4.00	1220	3.10	604	3.15	634
20,	*2.78	430	-----	-----	3.50	860	2.90	492	2.00	134	1.90	108	1.60	46	1.50	30	3.00	547	3.40	792	3.15	634	2.20	193
21,	*2.58	338	-----	-----	3.10	604	3.10	604	2.20	193	1.70	64	1.60	46	1.50	30	2.70	392	3.20	664	3.05	576	2.95	520
22,	*2.38	257	-----	-----	2.80	440	3.70	1000	2.10	162	1.70	64	2.10	162	1.40	16	2.70	392	2.90	492	3.10	604	2.95	520
23,	*2.18	187	-----	-----	3.00	547	4.00	1220	1.90	108	1.60	46	2.00	134	1.30	6	2.60	346	2.90	492	2.65	369	3.25	696
24,	1.98	129	-----	-----	2.70	392	3.40	792	2.00	134	1.60	46	1.90	108	1.30	6	2.60	346	2.70	392	2.90	492	3.25	696
25,	3.08	593	-----	-----	2.60	346	3.20	664	2.00	134	1.60	46	2.00	134	1.50	30	2.50	304	2.50	304	3.05	576	3.30	727
26,	3.08	593	-----	-----	2.50	304	3.00	547	2.00	134	3.50	860	1.90	108	1.70	64	2.60	346	2.40	264	2.85	466	*3.40	792
27,	3.08	593	-----	-----	2.70	392	2.80	440	1.90	108	3.40	792	1.60	46	2.10	162	2.40	264	2.30	228	*3.00	547	3.55	895
28,	3.18	652	-----	-----	2.50	304	2.60	346	1.80	84	3.00	547	1.60	46	1.70	64	2.60	346	2.30	228	3.05	576	3.85	1110
29,	3.18	652	-----	-----	2.50	304	2.60	346	1.80	84	2.70	392	1.50	30	2.20	193	2.60	346	2.30	228	2.70	392	3.25	696
30,	3.18	652	-----	-----	2.60	346	2.90	492	2.10	162	2.30	228	1.50	30	3.00	547	3.40	792	2.30	228	2.65	369	3.10	604
31,	1.76	76	-----	-----	2.80	440	-----	-----	2.00	134	-----	-----	1.40	16	3.00	547	-----	-----	2.20	193	-----	-----	3.75	1040

*Interpolated.
†Maximum at 7.25 P. M., 12.0 ft.=11,400 sec.-ft.
‡Estimated.
Note.—No readings during February.

ESTIMATED MONTHLY DISCHARGE OF LOYALHANNA CREEK, NEAR NEW ALEXANDRIA, WESTMORELAND COUNTY.

(Drainage area 270 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1910.					
November,	547	24	96	0.356	0.397
December,	3550	62	344	1.274	1.469
1911.					
January,	2990	76	570	2.111	2.434
March,	860	304	441	1.633	1.883
April,	1780	346	759	2.811	3.136
May,	664	84	219	.811	.935
June,	860	46	202	.748	.835
July,	860	16	117	.433	.499
August,	547	6	75	.278	.321
September,	11400	84	923	3.419	3.815
October,	2500	162	600	2.222	2.561
November,	634	148	415	1.537	1.715
December,	1420	193	605	2.241	2.583

Note.—No gage heights taken during February, 1911.

KISKIMINETAS RIVER

DESCRIPTION OF BASIN.

The Kiskiminetas river is the largest tributary of the Allegheny, and joins it near Freeport, approximately 30 miles above Pittsburgh, in the northwestern corner of Westmoreland county. It is known by this name as far as the mouth of Loyalhanna creek, 27 miles up, above which point it is called the Conemaugh river. The total drainage area of the stream is 1892 square miles.

The Conemaugh river proper is formed by the junction of the Little Conemaugh and Stony creek at Johnstown. The former rises in the western slope of the Alleghenies, on the eastern boundary of Cambria county, and flows northwesterly for about 30 miles to Johnstown. Stony creek rises in the high ridges of Somerset county, and flows northerly for about 40 miles to Johnstown. Both are rapid mountain streams, with steep slopes, rocky beds, and abrupt valleys. Their watersheds have been practically deforested, although the higher ridges are well timbered now with new growth. The watershed of Little Conemaugh river, including about 188 square miles, is densely inhabited, lying in the Cambria county bituminous coal field, and contains large areas of agricultural land. The Stony creek watershed is much less densely populated, although the Somerset county coal field, in the lower section, supports a large population. The upper watershed is sparsely inhabited, but little farmed, and contains considerable forest areas. The headwaters of both streams rise at an elevation of about 2300 feet, and at Johnstown are at elevation 1160 feet.

Below Johnstown the river follows a winding course in a general northwesterly direction, between precipitous banks and high timbered hillsides, and over a rocky bed, its slope to the mouth of Loyalhanna creek, 50 miles, being 6.8 feet per mile. From this latter point to the mouth at Freeport on the Allegheny river, the slope is at the rate of approximately 4 feet per mile.

The most important tributaries below Johnstown are Black Lick creek, drainage area approximately 412 square miles, from the north near Blairsville, and Loyalhanna creek, from the southeast. Both of these streams drain thickly populated and well cultivated areas, containing large bituminous coal fields.

The stream is lined with railroads, towns and industrial plants, while numerous coal mines are operated on the bordering hills and in the valleys of its tributaries.

The Kiskiminetas river carries vast quantities of alluvial material washed from its banks, and from the cultivated fields in its watershed, and is usually of a yellow color, due to this cause, and to the sulphur in the coal mine water of which it receives considerable.

The tributaries of the little Conemaugh above Johnstown are almost without exception used for water supply purposes, some of these containing large storage basins. At a point a short distance above Johnstown this stream has been known to be absolutely dry in seasons of drought. The lower tributaries of Stony creek, and the tributaries of the Conemaugh are similarly almost all in use for domestic or industrial supply. The main river is little used for domestic supply, but many large industrial plants use it.

The mean annual precipitation over this watershed is from 40 to 50 inches.

The discharge has been measured since May 29th, 1907, at Avonmore, approximately 24 miles above its mouth.

OHIO BASIN—STATION NO. 19.

KISKIMINETAS RIVER AT AVONMORE, PA.

DESCRIPTION OF STATION.

This station was established by the United States Geological Survey on May 29th, 1907, and has been maintained and operated since that date by the Water Supply Commission of Pennsylvania. It is located on the highway bridge on road leading to P. R. R. station, Avonmore, about one-fourth mile from the village of Avonmore.

The channel is straight for 400 feet above and 300 feet below the station. The right bank is high and rocky, while the left bank is low and overflows. The bed is of sand and is not permanent.

Discharge measurements are made from the downstream side of the bridge. The initial point for soundings is left face of lower right masonry guard fence of approach to bridge.

A standard chain gage is fastened to the hand-rail on the downstream side of the bridge. The length of chain from bottom of weight to the marker is 38.32 feet. The elevation of zero is arbitrary datum. Bench mark No. 1 is northwest corner of right masonry bridge seat marked "B.M."; elevation, 33.267 feet above gage datum. Bench mark No. 2 is east rail of west track of highway crossing; elevation 35.034 feet above gage datum. The gage is read twice daily by Ralph Fickes.

Since the establishment of this station 19 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF KISKIMINETAS RIVER, AT AVONMORE, WESTMORELAND COUNTY, PENNA.

(Drainage area 1,720 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.	
	1907.							
1.	May 29,	Horton,	391	1102	1.61	4.36	1775	
2.	Aug. 13,	do.	312	434	1.46	2.89	635	
3.	Sept. 11,	do.	416	3549	3.09	10.26	10969	
4.	Sept. 12,	do.	408	3141	2.74	9.15	8604	
	1908							
5.	Mar. 3,	Kenneth Grant,	429	5283	3.64	13.64	19205	
6.	Mar. 3,	do.	429	4872	3.48	12.81	16959	
7.	Mar. 3,	do.	424	4755	3.29	12.35	15685	
8.	Mar. 4,	do.	422	3881	2.97	10.74	11542	
9.	Mar. 4,	do.	419	3711	2.83	10.32	10488	
10.	Mar. 4,	do.	418	3580	2.76	10.08	9884	
11.	Mar. 4,	do.	417	3457	2.78	9.79	9634	
12.	Mar. 5,	do	417	3457	2.79	9.85	9658	
13.	Mar. 5,	do.	417	3457	2.72	9.79	9398	
14.	May 11,	do.	403	2250	2.34	7.17	5252	
15.	May 13,	do.	398	1806	2.09	6.06	3767	
16.	July 23,	do.	382	508	1.24	2.86	628	
17.	Aug. 23,	Bolster,	384	629	1.55	3.26	976	
18.	Sept. 25,	C. E. Ryder,	185	199	0.34	1.61	68	
	1910.							
19.	Mar. 2,	Kenneth Grant,	444	6427	4.24	16.70	27224	

DISCHARGE TABLE FOR KISKIMINETAS RIVER, AT AVONMORE, WESTMORELAND COUNTY, FROM MAY 29, 1907.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.42	0	7.00	5000	.60	16370	.20	33140	.80	53040
.50	30	.10	5140	.70	16635	.30	33470	.90	53420
.60	60	.20	5280	.80	16900	.40	33800	24.00	53800
.70	90	.30	5425	.90	17165	.50	34130	.10	54190
.80	125	.40	5570	13.00	17430	.60	34470	.20	54580
.90	165	.50	5720	.10	17700	.70	34810	.30	54970
2.00	205	.60	5870	.20	17970	.80	35150	.40	55360
.10	245	.70	6025	.30	18250	.90	35490	.50	55750
.20	285	.80	6180	.40	18530	19.00	35830	.60	56140
.30	330	.90	6340	.50	18810	.10	36170	.70	56530
.40	380	8.00	6500	.60	19090	.20	36510	.80	56920
.50	430	.10	6660	.70	19370	.30	36850	.90	57310
.60	480	.20	6820	.80	19650	.40	37190	25.00	57700
.70	530	.30	6985	.90	19930	.50	37540	.10	58090
.80	580	.40	7150	14.00	20210	.60	37890	.20	58480
.90	640	.50	7320	.10	20490	.70	38240	.30	58870
3.00	705	.60	7490	.20	20770	.80	38590	.40	59260
.10	770	.70	7660	.30	21050	.90	38940	.50	59650
.20	835	.80	7830	.40	21330	20.00	39290	.60	60040
.30	900	.90	8005	.50	21610	.10	39640	.70	60430
.40	970	9.00	8180	.60	21890	.20	39990	.80	60820
.50	1045	.10	8355	.70	22180	.30	40340	.90	61210
.60	1125	.20	8535	.80	22470	.40	40690	26.00	61600
.70	1205	.30	8715	.90	22760	.50	41040	.10	61990
.80	1290	.40	8900	15.00	23050	.60	41390	.20	62380
.90	1375	.50	9085	.10	23340	.70	41740	.30	62770
4.00	1460	.60	9275	.20	23640	.80	42090	.40	63160
.10	1545	.70	9465	.30	23940	.90	42440	.50	63550
.20	1630	.80	9660	.40	24240	21.00	42790	.60	63940
.30	1720	.90	9855	.50	24540	.10	43140	.70	64330
.40	1810	10.00	10050	.60	24840	.20	43490	80	64720
.50	1910	.10	10250	.70	25140	.30	43840	.90	65110
.60	2010	.20	10450	.80	25440	.40	44190	27.00	65500
.70	2110	.30	10660	.90	25740	.50	44550	.10	65890
.80	2220	.40	10870	16.00	26050	.60	44910	.20	66280
.90	2330	.50	11080	.10	26360	.70	45270	.30	66670
5.00	2445	.60	11300	.20	26670	.80	45630	.40	67060
.10	2560	.70	11520	.30	26980	.90	45990	.50	67450
.20	2680	.80	11750	.40	27290	22.00	46350	.60	67840
.30	2800	.90	11990	.50	27600	.10	46710	.70	68230
.40	2920	11.00	12230	.60	27920	.20	47070	.80	68620
.50	3045	.10	12470	.70	28240	.30	47430	.90	69010
.60	3170	.20	12710	.80	28560	.40	47790	28.00	69400
.70	3295	.30	12960	.90	28880	.50	48150	.10	69790
.80	3420	.40	13210	17.00	29200	.60	48520	.20	70180
.90	3550	.50	13470	.10	29520	.70	48890	.30	70570
6.00	3680	.60	13730	.20	29840	.80	49260	.40	70960
.10	3810	.70	13990	.30	30170	.90	49630	.50	71350
.20	3940	.80	14250	.40	30500	23.00	50000	.60	71740
.30	4070	.90	14515	.50	30830	.10	50380	.70	72130
.40	4200	12.00	14780	.60	31160	.20	50760	.80	72520
.50	4330	.10	15045	.70	31490	.30	51140	.90	72910
.60	4460	.20	15310	.80	31820	.40	51520	29.00	73300
.70	4595	.30	15575	.90	32150	.50	51900	30.00	77300
.80	4730	.40	15840	18.00	32480	.60	52280	31.00	81300
.90	4865	.50	16105	.10	32810	.70	52660		

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF KISKIMINETAS RIVER, AT AVONMORE, WESTMORELAND COUNTY, PENNA.

1907.	JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,			4.6	2010	3.3	900	2.9	640	4.5	1910	3.8	1290	4.1	1545
2,			4.2	1630	3.2	835	2.8	580	4.0	1460	3.6	1125	4.0	1460
3,			4.0	1460	3.1	770	5.5	3045	3.7	1205	7.0	5000	3.9	1375
4,			3.7	1205	2.9	640	6.4	4200	4.3	1720	9.4	8900	3.8	1290
5,			3.4	970	2.8	580	6.0	3680	6.4	4200	7.7	6025	3.6	1125
6,			3.2	835	2.9	640	5.0	2445	5.5	3045	6.7	4595	3.3	900
7,			3.2	835	3.5	1045	4.3	1720	4.8	2220	9.9	9855	4.1	1545
8,			4.2	1630	3.3	900	3.8	1290	4.5	1910	11.0	12230	4.0	1460
9,			3.6	1125	3.4	970	3.6	1125	6.2	3940	8.6	7490	3.9	1375
10,			3.4	970	3.4	970	3.5	1045	5.4	2920	7.5	5720	4.7	2110
11,	4.6	2010	4.2	1630	3.6	1125	8.8	7830	4.8	2220	6.4	4200	12.0	14780
12,	8.1	6660	6.6	4460	3.1	770	9.0	8180	4.5	1910	6.0	3680	8.7	7660
13,	7.3	5425	6.5	4330	2.9	640	6.8	4730	4.2	1630	5.4	2920	6.8	4730
14,	13.0	17430	5.3	2800	2.7	530	5.4	2920	4.0	1460	5.0	2445	6.2	3940
15,	10.8	11750	4.4	1810	2.6	480	4.6	2010	3.7	1205	4.9	2330	6.1	3810
16,	8.2	6820	3.8	1290	2.5	430	4.1	1545	3.5	1045	4.5	1910	6.7	4595
17,	6.8	4730	3.6	1125	2.6	480	3.9	1375	3.3	900	4.2	1630	6.0	3680
18,	6.1	3810	4.5	1910	2.6	480	3.7	1205	3.2	835	4.1	1545	5.8	3420
19,	5.3	2800	5.0	2445	2.5	430	4.1	1545	3.1	770	4.2	1630	5.4	2920
20,	4.9	2330	4.2	1630	2.5	430	4.3	1720	3.0	705	4.9	2330	4.8	2220
21,	4.6	2010	3.7	1205	2.5	430	4.0	1460	3.0	705	4.3	1720	4.6	2010
22,	4.3	1720	3.4	970	2.4	380	4.6	2010	2.9	640	4.2	1630	4.8	2220
23,	4.0	1460	3.2	835	2.6	480	4.8	2220	3.0	705	4.5	1910	6.5	4330
24,	4.5	1910	5.8	3420	3.5	1045	5.0	2445	2.9	640	4.2	1630	17.5	30830
25,	4.1	1545	4.2	1630	9.2	8535	4.6	2010	2.8	580	4.4	1810	11.5	13470
26,	4.0	1460	6.0	3680	6.0	3680	4.0	1460	2.8	580	4.3	1720	9.1	8355
27,	4.1	1545	5.8	3420	4.5	1910	3.8	1290	3.0	705	4.4	1810	8.0	6500
28,	3.8	1290	4.2	1630	3.8	1290	3.5	1045	5.4	2920	4.5	1910	7.5	5720
29,	3.5	1045	3.6	1125	3.5	1045	4.7	2110	6.0	3680	4.6	2010	8.3	6985
30,	3.7	1205	3.3	900	3.3	900	5.0	2445	4.8	2220	4.2	1630	8.5	7320
31,			3.1	770	3.1	770			4.2	1630			8.0	6500

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF KISKIMINETAS RIVER, AT AVONMORE, WESTMORELAND COUNTY, PENNA.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	7.1	5140	4.7	2110	4.7	2110	8.0	6500	6.3	4070	5.6	3170	2.5	430	2.2	285	1.9	165	1.8	125	1.8	125	1.8	125
2,	6.4	4200	4.7	2110	12.1	15045	7.4	5570	7.1	5140	5.3	2800	2.5	430	2.3	330	1.9	165	1.8	125	1.8	125	1.8	125
3,	5.5	3045	4.7	2110	14.1	20490	7.7	6025	6.5	4330	4.6	2010	2.5	430	2.1	245	1.8	125	1.8	125	1.8	125	2.3	330
4,	5.2	2680	4.7	2110	10.7	11520	6.7	4595	6.0	3680	4.2	1630	2.6	480	2.1	245	1.8	125	1.8	125	1.8	125	1.8	125
5,	4.8	2220	4.7	2110	9.8	9660	6.3	4070	5.6	3170	3.9	1375	2.6	480	2.2	285	1.7	90	1.8	125	1.8	125	1.8	125
6,	4.3	1720	4.7	2110	11.8	14250	8.1	6660	7.4	5570	3.7	1205	2.4	380	2.6	480	1.7	90	1.8	125	1.7	90	1.8	125
7,	4.2	1630	4.7	2110	17.8	31820	6.2	3940	9.1	8355	3.5	1045	2.4	380	2.8	580	1.7	90	1.8	125	1.7	90	1.9	165
8,	4.3	1720	4.7	2110	14.8	22470	5.8	3420	13.3	18250	3.2	835	2.4	380	2.7	530	1.7	90	1.8	125	1.7	90	2.9	640
9,	4.7	2110	4.7	2110	13.8	19650	12.1	15045	10.2	10450	3.2	835	2.4	380	2.6	480	1.7	90	1.8	125	1.7	90	2.9	640
10,	5.8	3420	4.7	2110	10.6	11300	9.5	9085	8.6	7490	3.3	900	2.3	330	2.6	480	1.7	90	1.8	125	1.7	90	3.0	705
11,	6.3	4070	4.7	2110	9.9	9855	8.9	8005	7.5	5720	4.0	1460	2.2	285	2.3	330	1.7	90	1.8	125	1.7	90	2.7	530
12,	7.0	5000	4.7	2110	10.2	10450	8.3	6985	6.7	4595	3.4	970	2.2	285	2.3	330	1.7	90	1.8	125	1.8	125	2.5	430
13,	16.0	26050	4.7	2110	10.0	10050	7.6	5870	6.0	3680	3.2	835	2.2	285	2.1	245	b1.7	90	1.8	125	1.8	125	2.5	430
14,	12.0	14780	14.0	20210	10.8	11750	6.9	4865	5.6	3170	3.0	705	2.2	285	2.1	245	1.7	90	1.7	90	1.8	125	2.5	430
15,	8.7	7660	20.3	40340	10.9	11990	6.7	4595	5.5	3045	2.9	640	2.6	480	2.1	245	1.7	90	1.7	90	2.2	285	2.3	330
16,	7.8	6180	21.4	44190	13.1	17700	7.2	5280	7.9	6340	3.9	1375	2.6	480	2.0	205	1.7	90	1.7	90	2.0	205	2.2	285
17,	6.9	4865	11.8	14250	9.8	9660	6.7	4595	8.8	7830	4.0	1460	2.4	380	2.0	205	1.7	90	1.7	90	2.2	285	2.3	330
18,	6.2	3940	8.8	7830	10.6	11300	5.9	3550	9.0	8180	3.5	1045	2.2	285	2.1	245	1.6	60	1.7	90	2.0	205	2.8	580
19,	5.8	3420	7.8	6180	a30.1	77700	12.1	15045	7.2	5280	3.7	1205	2.2	285	2.4	380	1.6	60	1.7	90	1.8	125	7.0	5000
20,	5.3	2800	6.7	4595	17.9	32150	10.2	10450	13.4	18530	3.2	835	2.2	285	2.4	380	1.6	60	1.7	90	1.8	125	5.1	2560
21,	5.0	2445	6.0	3680	11.9	14515	7.1	5140	10.1	10250	3.6	1125	2.2	285	2.7	530	1.6	60	1.7	90	1.8	125	3.8	1290
22,	5.7	3295	5.6	3170	9.6	9275	6.4	4200	8.2	6820	3.7	1205	3.2	835	2.6	480	1.6	60	1.7	90	1.8	125	3.4	970
23,	6.7	4595	4.9	2330	8.9	8005	5.9	3550	7.8	6180	3.7	1205	3.1	770	3.3	900	1.6	60	1.7	90	1.9	165	3.4	970
24,	6.2	3940	5.2	2680	8.2	6820	5.5	3045	6.9	4865	3.2	835	2.8	580	2.9	640	1.6	60	1.7	90	1.9	165	3.4	970
25,	5.5	3045	5.4	2920	7.7	6025	5.8	3420	6.0	3680	2.9	640	5.7	3295	2.6	480	1.6	60	1.7	90	1.9	165	2.9	640
26,	8.2	6820	5.2	2680	6.9	4865	5.5	3045	5.9	3550	3.0	705	4.6	2010	2.3	330	1.6	60	1.7	90	1.8	125	2.9	640
27,	10.2	10450	5.6	3170	7.3	5425	5.3	2800	5.3	2800	2.8	580	3.9	1375	2.1	245	1.6	60	1.7	90	1.8	125	3.0	705
28,	13.8	19650	4.8	2220	8.1	6660	5.1	2560	5.0	2445	2.7	530	3.2	835	2.0	205	1.7	90	1.7	90	1.8	125	2.8	580
29,	13.5	18810	4.0	1460	8.5	7320	4.5	1910	5.5	3045	2.5	430	2.8	580	2.0	205	1.8	125	1.8	125	1.8	125	2.6	480
30,	8.3	7000	------	------	10.1	10250	4.3	1720	6.6	4460	2.5	430	2.6	480	1.9	165	1.8	125	1.8	125	1.8	125	2.6	480
31,	8.3	7000	------	------	8.3	6985	------	------	5.6	3170	------	------	2.4	380	1.9	165	------	------	1.8	125	------	------	2.7	530

a Maximum approximate 30.8 at 4 P. M.=80500 sec. ft.
b Interpolated.
River frozen Jan. 30 to Feb. 13. Jan. 30-31 assume gage height 8.3, discharge 7000 sec. ft., Feb. 1-13, inclusive, assume gage height 4.7, discharge 2110 sec. ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF KISKIMINETAS RIVER, AT AVONMORE, WESTMORELAND COUNTY, PENNA.

1909.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1, ...	2.6	480	3.7	1205	7.7	6025	5.7	3295	13.0	17430	2.85	610	3.45	1010	2.85	610	2.55	455	1.85	145	2.45	405	2.15	265
2, ...	4.1	1545	3.6	1125	9.2	8535	5.6	3170	12.8	16900	3.8	1290	3.1	770	2.6	480	2.25	305	1.85	145	2.45	405	2.15	265
3, ...	4.2	1630	3.8	1290	11.5	13470	5.5	3045	9.8	9660	3.25	865	2.85	610	2.35	355	2.15	265	1.85	145	2.35	355	2.15	265
4, ...	4.1	1545	4.0	1460	13.7	19370	5.5	3045	9.8	9660	3.5	1045	2.8	580	2.2	285	2.05	225	1.85	145	2.35	355	2.05	225
5, ...	3.6	1125	4.1	1545	11.5	13470	5.7	3295	8.7	7660	3.55	1085	2.55	455	2.05	225	2.1	245	1.9	165	2.3	330	2.05	225
6, ...	3.7	1205	6.0	3680	8.8	7830	5.6	3170	7.8	6180	6.05	3745	2.45	405	2.05	225	2.05	225	1.85	145	2.25	305	2.05	225
7, ...	5.1	2560	6.5	4330	8.0	6500	10.4	10870	7.1	5140	5.6	3170	2.5	430	2.0	205	2.05	225	1.75	108	2.25	305	2.05	225
8, ...	4.0	1460	5.6	3170	7.5	5720	8.8	7830	6.3	4070	4.45	1860	2.35	355	1.95	185	2.05	225	1.75	108	2.25	305	2.25	305
9, ...	3.5	1045	4.5	1910	7.5	5720	7.5	5720	5.8	3420	4.3	1720	2.4	380	2.0	205	1.95	185	1.75	108	2.25	305	2.55	455
10, ...	3.5	1045	5.5	3045	8.5	7320	6.9	4865	4.7	2110	5.45	2980	2.25	305	1.85	145	2.0	205	1.8	125	2.4	380	2.55	455
11, ...	3.5	1045	6.1	3810	8.5	7320	6.2	3940	5.4	2920	11.95	14645	2.15	265	1.85	145	1.95	185	1.85	145	2.45	405	2.75	555
12, ...	3.7	1205	5.3	2800	7.3	5425	5.8	3420	5.2	2680	9.0	8180	2.2	285	1.9	165	1.95	185	2.15	265	2.45	405	2.75	555
13	3.6	1125	5.5	3045	6.6	4460	5.6	3170	4.7	2110	6.95	4930	2.15	265	1.85	145	1.95	185	4.15	1585	2.35	355	2.95	670
14, ...	3.6	1125	6.5	4330	6.3	4070	10.5	11080	4.4	1810	6.5	4330	2.2	285	1.9	165	1.95	185	3.15	800	2.35	355	4.95	2390
15, ...	4.7	2110	7.8	6180	5.8	3420	12.2	15310	4.1	1545	5.65	3230	2.25	305	2.05	225	1.9	165	2.6	480	2.2	285	6.15	3875
16, ...	7.8	6180	8.9	8005	5.4	2920	9.3	8715	4.1	1545	4.95	2390	2.25	305	3.7	1205	2.05	225	2.55	455	2.25	305	5.25	2740
17, ...	6.2	3940	11.1	12470	5.1	2560	7.9	6340	3.8	1290	4.5	1910	2.3	330	3.7	1205	1.85	145	2.35	355	2.25	305	6.75	4665
18, ...	7.6	5870	7.2	5280	4.9	2330	7.0	5000	3.7	1205	4.45	1860	2.15	265	3.65	1165	2.05	225	2.15	265	2.25	305	6.05	3745
19, ...	7.0	5000	6.9	4865	4.6	2010	6.3	4070	3.5	1045	4.4	1810	2.1	245	3.1	770	1.95	185	2.15	265	2.25	305	5.95	3615
20, ...	5.4	2920	7.1	5140	5.6	3170	5.8	3420	3.3	900	4.35	1765	2.05	225	2.85	610	1.9	165	2.3	330	2.3	330	5.45	2980
21, ...	5.0	2445	7.6	5870	6.2	3940	8.1	6660	3.5	1045	3.55	1085	2.05	225	2.65	505	1.85	145	2.45	405	2.25	305	5.45	2980
22, ...	4.9	2330	6.9	4865	5.5	3045	11.5	13470	4.6	2010	3.5	1045	2.0	205	2.6	480	1.85	145	2.45	405	2.25	305	5.45	2980
23, ...	4.8	2220	6.9	4865	5.1	2560	11.2	12710	4.3	1720	3.25	865	2.25	305	2.35	355	1.75	108	2.45	405	2.25	305	5.45	2980
24, ...	8.5	7320	15.7	25140	4.7	2110	9.5	9085	3.4	970	3.6	1125	3.9	1375	2.3	330	2.15	265	3.45	1010	2.25	305	5.55	3105
25, ...	8.2	6820	14.1	20490	5.1	2560	8.6	7490	3.2	835	3.25	865	3.15	800	2.15	265	2.1	245	5.2	2680	2.5	430	5.55	3105
26, ...	7.6	5870	10.8	11750	8.0	6500	8.4	7150	3.1	770	3.05	735	2.75	555	2.15	265	2.35	355	3.95	1415	2.45	405	5.55	3105
27, ...	5.7	3295	9.2	8535	7.5	5720	8.1	6660	3.1	770	3.1	770	2.6	480	2.2	285	2.15	265	3.45	1010	2.35	355	5.55	3105
28, ...	5.2	2680	8.5	7320	7.3	5425	7.6	5870	3.2	835	4.55	1960	2.35	355	2.15	265	2.05	225	3.05	735	2.35	355	5.55	3105
29.	4.7	2110	------	------	6.9	4865	7.6	5870	3.6	1125	4.1	1545	2.3	330	2.2	285	1.95	185	2.85	610	2.25	305	5.35	2860
30	4.5	1910	------	------	5.2	2680	11.0	12230	3.3	900	3.95	1415	2.15	265	2.05	225	1.9	165	2.65	505	2.3	330	5.05	2505
31	4.2	1630	------	------	5.1	2560	------	------	3.1	770	------	------	2.4	380	2.3	330	------	------	2.6	480	------	------	5.05	2505

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF KISKIMINETAS RIVER, AT AVONMORE, WESTMORELAND COUNTY, PENNA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1	5.05	2505	5.35	2800	18.25	33255	3.56	1093	5.73	3332	4.43	1840	3.35	935	1.95	185	1.78	118	2.37	365	2.11	249	4.11	1554
2,	5.25	2740	4.85	2275	16.38	27230	3.43	992	5.06	2514	4.77	2187	3.17	816	1.95	185	1.81	129	2.23	298	2.08	237	3.13	790
3,	8.35	7065	5.05	2505	15.10	23340	3.36	942	4.70	2110	4.97	2410	3.05	738	1.90	165	1.93	177	2.11	249	2.08	237	3.11	776
4,	11.45	13340	5.95	3615	12.78	16847	3.26	874	4.68	2090	4.77	2187	2.93	660	1.90	165	3.69	1197	2.04	221	2.08	237	3.33	921
5,	7.35	5495	5.55	3105	11.45	13340	3.28	887	4.50	1910	4.40	1810	2.97	686	1.87	153	5.48	3020	2.01	209	2.11	249	3.32	914
6,	9.45	8990	5.05	2505	11.28	12910	3.36	942	4.06	1511	4.90	2330	2.77	565	1.85	145	3.62	1141	1.96	189	2.13	257	3.99	1452
7,	11.45	13340	6.75	4665	12.20	15310	3.23	854	3.80	1290	5.86	3498	2.77	565	1.85	145	4.33	1747	1.99	201	2.08	237	4.59	2000
8,	9.05	8270	6.85	4800	10.00	10050	3.13	790	3.68	1189	5.00	2445	3.39	963	1.85	145	3.65	1165	1.98	197	2.08	237	4.26	1684
9,	7.15	5210	7.45	5645	8.38	7117	3.08	757	3.66	1173	4.47	1880	3.15	802	1.85	145	3.15	802	1.95	185	2.03	217	3.93	1400
10,	6.25	4005	6.35	4135	7.28	5396	2.95	672	3.76	1256	5.05	2502	2.96	640	1.90	165	2.91	646	1.93	177	2.03	217	3.41	978
11,	8.25	6900	7.85	6260	6.52	4356	2.90	640	3.73	1230	6.80	4730	2.69	525	2.05	225	2.68	520	1.93	177	2.08	237	3.99	1452
12,	10.95	12110	7.45	5645	6.00	3680	2.76	560	4.78	2198	6.87	4824	2.60	480	2.35	355	2.83	598	1.91	169	2.09	241	3.91	1384
13	11.95	14645	7.05	5070	5.70	3295	2.70	530	4.76	2176	6.16	3888	2.69	525	2.25	308	3.08	757	1.88	157	2.13	257	3.76	1256
14,	11.45	13340	7.35	5495	5.55	3108	2.73	545	4.16	1596	5.60	3170	2.83	598	2.15	265	4.27	1693	1.88	157	2.09	241	3.79	1282
15,	11.75	14120	7.45	5645	4.95	2388	2.63	495	3.90	1375	5.07	2526	2.66	510	1.96	189	3.63	1149	1.88	157	2.13	257	3.71	1214
16,	11.45	13340	10.75	11635	4.68	2090	2.66	510	3.69	1197	5.06	2514	2.51	435	1.93	177	2.93	660	1.89	161	2.15	265	3.61	1133
17,	10.75	11635	a23.50	51900	5.02	2468	2.83	598	3.48	1030	4.93	2364	6.30	4070	1.87	153	2.67	515	1.88	157	2.25	308	3.63	1149
18,	13.75	19510	20.95	42615	5.00	2445	3.28	887	3.56	1093	5.26	2752	4.10	1545	1.85	145	2.58	470	1.88	157	2.23	298	3.57	1101
19,	19.95	39215	16.45	27445	4.72	2132	5.66	3245	3.68	1189	10.35	10765	3.87	1350	1.87	153	2.35	355	1.88	157	2.23	298	3.70	1205
20,	11.55	13600	15.25	23790	4.80	2220	5.58	3145	3.62	1141	7.61	5886	3.13	790	1.93	177	2.28	321	1.85	145	2.33	345	4.00	1460
21,	8.55	7405	17.75	31605	5.15	2620	6.36	4148	3.92	1392	6.25	4005	2.75	555	2.55	455	2.21	290	1.85	145	2.24	303	4.46	1870
22,	17.15	29680	18.95	35660	5.35	2860	6.56	4408	5.06	2514	5.10	2560	2.53	445	2.17	273	2.15	265	1.94	181	2.18	277	4.39	1801
23,	10.65	11410	11.05	12350	5.05	2502	6.06	3758	4.63	2040	4.60	2010	2.39	375	2.01	209	2.11	249	2.28	321	2.23	298	4.29	1711
24,	8.75	7745	8.35	7065	4.88	2308	5.66	3245	4.46	1870	4.15	1588	2.35	355	1.96	189	2.19	281	2.87	622	2.33	345	5.73	3332
25,	7.45	5645	7.25	5350	4.72	2132	9.93	9914	4.88	2308	3.79	1282	2.23	298	1.90	165	2.48	420	2.33	345	2.33	345	6.91	4878
26,	6.35	4135	6.65	4530	4.55	1960	11.38	13160	5.99	3667	3.55	1085	2.17	273	1.95	185	2.41	385	2.19	281	2.53	445	5.61	3182
27,	8.05	6580	7.95	6420	4.25	1675	8.86	7935	5.29	2788	3.35	935	2.10	245	1.90	165	2.37	365	2.18	277	2.69	525	4.24	1666
28,	8.15	6740	17.50	30830	4.05	1502	7.58	5840	4.72	2132	3.31	907	2.09	241	1.85	145	2.28	321	2.18	277	2.75	555	4.96	2399
29,	7.05	5070	-----	-----	3.85	1332	6.60	4460	4.43	1840	4.90	2330	2.05	225	1.85	145	2.73	545	2.14	261	3.95	1418	9.55	9180
30,	6.15	3875	-----	-----	3.78	1273	6.16	3888	4.10	1545	4.09	1536	2.03	217	1.80	125	2.63	495	2.13	257	4.25	1675	13.81	19680
31,	5.85	3485	-----	-----	3.72	1222	-----	-----	4.03	1486	-----	-----	1.95	185	1.84	141	-----	-----	2.08	237	-----	-----	9.51	9104

a Maximum 23.65 at 11.30 A. M.=52470 sec. ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF KISKIMINETAS RIVER, AT AVONMORE, WESTMORELAND COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	7.96	6436	8.39	7134	6.44	4252	5.94	3602	5.51	3058	3.33	921	3.10	770	1.92	173	7.25	5352	7.60	5870	3.90	1375	4.52	1930
2,	8.62	7524	7.51	5735	6.04	3732	5.59	3158	6.05	3745	3.00	705	2.82	592	1.90	165	5.40	2920	c11.05	12350	3.85	1332	4.50	1910
3,	10.13	10310	6.69	4582	5.64	3220	5.71	3308	5.78	3395	2.87	622	2.68	520	2.12	253	3.74	1239	8.75	7745	3.65	1165	4.45	1860
4,	9.26	8643	6.46	4278	5.39	2908	5.91	3563	5.11	2572	2.74	550	2.55	455	2.08	237	3.65	1165	7.68	5994	3.48	1030	4.35	1765
5,	7.21	5294	6.51	4343	5.03	2480	8.59	7473	4.74	2154	2.73	545	2.42	390	2.09	241	3.29	894	7.00	5000	3.35	935	4.02	1477
6,	9.51	9104	5.91	3563	5.21	2692	b14.02	20265	4.44	1850	5.60	3170	2.38	370	2.42	390	3.65	1165	5.95	3615	3.41	978	3.84	1324
7,	10.01	10070	5.26	2752	5.47	3008	12.37	15760	4.29	1711	5.54	3095	2.38	370	2.28	321	4.44	1850	8.95	8092	4.82	2242	3.75	1248
8,	6.16	3888	5.79	3408	4.87	2297	10.49	11059	4.05	1502	4.59	2000	2.72	540	2.05	225	3.82	1307	9.08	8320	5.80	3420	3.95	1418
9,	5.86	3498	5.21	2692	5.07	2526	9.64	9351	3.93	1400	3.99	1452	2.60	480	1.95	185	4.12	1562	8.01	6516	4.90	2330	4.25	1675
10,	5.66	3245	4.96	2399	5.09	2548	9.41	8918	3.89	1366	3.54	1077	2.62	490	1.90	165	6.10	3810	6.10	3810	4.55	1960	5.88	3524
11,	7.99	6484	4.47	1880	6.74	4649	8.34	7051	3.99	1452	3.21	842	2.34	350	1.85	145	5.30	2800	6.14	3862	4.32	1738	5.72	3320
12,	7.05	5014	4.26	1684	6.57	4421	7.41	5585	3.77	1265	3.61	1133	2.50	430	1.85	145	5.30	2800	6.08	3784	5.55	3108	5.50	3045
13,	12.74	16741	4.76	2176	7.27	5382	6.74	4649	3.54	1077	4.25	1675	2.60	480	1.85	145	4.30	1720	5.60	3170	5.60	3170	5.72	3320
14,	14.81	22500	5.01	2456	7.31	5440	6.61	4474	3.37	949	4.01	1468	2.85	610	1.82	133	3.71	1214	5.02	2468	5.25	2740	5.62	3195
15,	a15.76	25320	8.76	7762	6.58	4434	8.37	7100	3.24	861	3.69	1197	2.90	640	1.85	145	e14.05	20312	8.40	7150	5.05	2502	7.61	5886
16,	11.86	14409	8.31	7002	6.19	3927	7.64	5932	3.15	802	3.34	928	2.45	405	1.90	165	15.80	25440	8.38	7117	5.02	2468	10.15	10350
17,	8.95	8092	7.13	5182	5.49	3032	6.91	4878	3.09	764	3.13	790	2.30	330	1.90	165	10.55	1190	7.40	5570	4.72	2132	d10.50	11080
18,	7.39	5556	7.81	6196	5.99	3667	6.34	4122	3.01	712	3.14	796	2.22	294	2.05	225	8.20	6820	10.48	11038	5.90	3550	8.62	7524
19,	6.55	4395	9.15	8445	6.11	3823	5.84	3472	2.87	622	3.19	828	2.14	261	2.00	205	6.70	4595	9.20	8535	8.15	6740	7.65	5948
20,	5.91	3563	8.26	6919	7.59	5855	6.51	4343	2.84	604	3.44	1000	2.12	253	1.90	165	6.20	3940	7.56	5810	7.25	5352	6.52	4356
21,	5.63	3208	7.31	5440	7.67	5978	7.61	5886	2.99	698	3.04	731	2.32	340	1.92	173	5.38	2896	6.62	4487	6.45	4265	5.94	3602
22,	6.11	3823	6.31	4083	6.51	4343	7.31	5440	2.87	622	2.74	550	2.30	330	1.88	157	6.62	4487	6.01	3693	5.65	3232	6.04	3732
23,	5.51	3058	5.93	3589	6.44	4252	8.50	7320	2.69	525	2.55	455	2.45	405	1.88	157	6.18	3914	5.78	3395	5.30	2800	6.93	4973
24,	4.66	2070	5.66	3245	6.19	3927	8.13	6708	2.59	475	2.47	415	2.30	330	1.90	165	4.98	2422	5.72	3320	5.45	2982	7.22	5309
25,	4.26	1684	5.47	3008	5.59	3158	7.29	5410	3.09	764	2.47	415	2.32	340	1.98	197	4.48	1890	5.28	2776	5.98	3654	6.35	4135
26,	4.73	2143	6.19	3927	5.21	2692	6.61	4474	2.94	666	4.27	1693	2.30	330	2.32	340	4.35	1765	4.58	1990	5.45	2982	6.46	4278
27,	5.99	3667	7.23	5324	5.49	3032	5.99	3667	2.69	525	4.39	1801	2.22	294	2.55	455	4.34	1756	4.34	1756	5.26	2752	8.42	7184
28,	8.59	7473	7.46	5660	6.27	4031	5.51	3058	2.64	500	4.14	1579	2.10	245	2.80	580	5.80	3420	4.22	1648	5.10	2560	8.92	8040
29,	8.71	7677	------	------	5.64	3220	5.23	2716	2.54	450	4.42	1830	2.05	225	4.15	1588	6.05	3745	4.05	1502	5.18	2656	7.18	5252
30,	13.69	19340	------	------	5.67	3258	5.44	2970	3.44	1000	3.62	1141	1.98	197	8.24	6886	9.28	8679	3.90	1375	5.05	2502	6.86	4811
31,	10.86	11894	------	------	6.14	3862	------	------	3.51	1053	------	------	1.95	185	6.68	4568	------	------	3.85	1332	------	------	8.02	6532

a Max. 15.91 feet at 9.00 a. m.=25770 sec. ft.
b 14.09 feet at 8.30 a. m.=20460 sec. ft.
c Max. 11.35 feet at 11.00 a. m.=13085 sec. ft.
d Max. 11.0 feet at 9.00 a. m.=12230 sec. ft.
e Maximum 19.5 feet at 9.00 P. M.=37540 sec. ft.

ESTIMATED MONTHLY DISCHARGE OF KISKIMINETAS RIVER, AT AVONMORE, WESTMORELAND COUNTY.

(Drainage area 1,720 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1907.					
July,	4460	770	1796	1.044	1.204
August,	8535	380	1113	0.647	0.746
September,	8180	580	2378	1.382	1.542
October,	4200	580	1684	0.979	1.129
November,	12230	1125	3488	2.028	2.263
December,	30830	900	5167	3.004	3.463
1908.					
January,	26050	1630	6248	3.633	4.189
February,	44190	1460	6528	3.795	4.093
March,	80500	2110	14421	8.384	9.666
April,	15045	1720	5518	3.208	3.579
May,	18530	2445	6069	3.528	4.068
June,	3170	430	1134	0.659	0.735
July,	3295	285	608	0.353	0.407
August,	900	165	358	0.208	0.240
September,	15	60	90	0.052	0.058
October,	125	90	108	0.063	0.073
November,	285	90	138	0.080	0.089
December,	5000	125	718	0.417	0.481
The year,	80500	60	3495	2.032	27.678
1909.					
January,	7320	480	2671	1.553	1.791
February,	25140	1125	5982	3.477	3.621
March,	19370	2010	5600	3.256	3.754
April,	15310	3045	6666	3.876	4.325
May,	17430	770	3582	2.083	2.402
June,	14645	610	2494	1.450	1.618
July,	1375	205	431	0.250	0.288
August,	1205	145	397	0.231	0.266
September,	455	108	217	0.126	0.141
October,	2680	108	514	0.299	0.345
November,	430	285	340	0.198	0.221
December,	4665	225	1969	1.145	1.320
The year,	25140	108	2572	1.495	20.092
1910.					
January,	39215	2505	10360	6.023	6.944
February,	52470	2275	12696	7.381	7.960
March,	33255	1222	6915	4.020	4.635
April,	13160	495	2690	1.564	1.745
May,	3667	1030	1812	1.053	1.214
June,	10765	907	2825	1.642	1.832
July,	4070	185	697	0.405	0.467
August,	455	125	192	0.112	0.129
September,	3020	118	693	0.403	0.449
October,	622	145	229	0.133	0.153
November,	1675	217	377	0.219	0.244
December,	19680	776	2707	1.574	1.815
The year,	52470	118	3516	2.044	27.587
1911.					
January,	25770	1684	7939	4.616	5.322
February,	8445	1684	4459	2.592	2.699
March,	5978	2297	3743	2.176	2.509
April,	20460	2716	6190	3.599	4.016
May,	3745	450	1263	.734	.846
June,	3170	415	1180	.686	.766
July,	770	185	395	.230	.265
August,	6886	133	621	.361	.416
September,	37540	894	4569	2.656	2.964
October,	13085	1332	4938	2.871	3.310
November,	6740	935	2688	1.563	1.744
December,	12230	1248	4323	2.513	2.897
The year,	37540	133	3526	2.050	27.754

SHENANGO RIVER

DESCRIPTION OF BASIN.

The Shenango river, which forms, with the Mahoning river, at a point about five miles south of New Castle, Lawrence county, the Beaver river, rises in the southwestern part of Crawford county, Pa., about five miles southeast of Conneaut Lake, in the Pymatuning Swamp. The general course of the stream is southerly, with numerous large sweeps to the east and west, crossing once for a short distance into Ohio but immediately returning into Pennsylvania. The total length from the head of Pymatuning Swamp to the junction with the Mahoning river is approximately 80 miles and the drainage area above the mouth is 1080 square miles, of which 793 are in Pennsylvania.

The main tributaries of the stream are the Little Shenango, which joins it at Greenville, from the east, Pymatuning creek, from the west, just above Sharpsville, Big Yankee run, from the west at South Sharon, and Deer creek from the west, just below Pulaski, and Neshannock creek, from the east at New Castle, the latter being by far the largest, draining approximately 243 square miles.

The upper portion of the water shed lies within the once glaciated area and the main river and its major tributaries all find their sources in extensive swamp areas, while their valleys are broad and flat. Descending the main stream, however, the valley becomes more narrow and the hillsides more abrupt until near the mouth the valley again becomes wide and flat. A large portion of the watershed is under cultivation and the timber areas, except in the swamps, are not extensive.

The slope of the stream through the swamp, for the first twenty miles of its course, is at approximately 2 feet per mile, becoming a little more rapid as it descends, its fall through Mercer county being about three feet per mile. The total slope from its source in Pymatuning Swamp, at elevation about 1020, to its mouth, at elevation about 760, is 260 feet, or 3.25 feet per mile.

From Greenville northward the watershed is not thickly inhabited. but southward from this point industries are more or less congested and the valley is thickly populated, becoming more so as the mouth is approached. The principal towns along the main stream, going southward, are Jamestown, Greenville, Sharpsville, Sharon, South Sharon, Pulaski and New Castle, the combined population of which is approximately 75,000. Some of these towns obtain their water supply from the Shenango river and the stream is very largely used by the steel plants, railroads and other industries which are numerous in this valley. A small amount of water power only is developed on this stream, largely at grist and flour mills, the total installation not amounting to over 600 horse power.

The mean annual precipitation over the upper portion of this watershed is about 40 inches, decreasing as the mouth is approached.

The discharge of the stream has been measured since September, 1909, at Sharon, Pa.

OHIO BASIN—STATION NO. 20.

SHENANGO RIVER AT SHARON, PENNA.

DESCRIPTION OF STATION.

This station was established on August 1st., 1909, by the Carnegie Steel Company for the Water Supply Commission of Pennsylvania and is situated about fifty feet north of the Chestnut Street bridge in Sharon.

The channel above and below the station is straight for 500 feet. Both banks are approximately twelve feet above the river bed and overflow during extreme high water. The bed is composed of gravel and dirt. The current under the Chestnut Street bridge is very sluggish.

Discharge measurements are taken at numerous points, namely, Mill Street bridge, State Street bridge, Carnegie plate girder bridge, Upper Wheatland bridge and at two wading sections below the gage. At the

Mill Street bridge the measurements are taken from the upstream side, the initial point for soundings being end of handrail, right side (looking downstream). At the State Street bridge the measurements are taken from the downstream side, the initial point for soundings being the top of the left abutment. At the Carnegie plate girder bridge, which is two miles below the gage, the measurements are taken from the upstream side, the initial point for soundings being top of right abutment (looking down stream). At the Upper Wheatland bridge which is two and one-half miles below the gage, measurements are taken from the downstream side, the initial point for soundings being fact of left abutment. Wading section "A" is just south of the southern boundary line of Sharon, while wading section "B" is at South Main street, near the Atlantic Refining Company's tanks.

A staff gage is fastened to the cribbing on the right bank about fifty feet above the Chestnut Street bridge. The elevation of zero is 840.00 feet above sea level. Bench mark No. 1 is U. S. G. S. bronze tablet on southeast abutment of Chestnut Street bridge; elevation 855.92 feet or 15.92 feet above gage datum. The gage is read twice daily by an employee of the Carnegie Steel Company.

Owing to the various channel conditions at the above bridges the State Street bridge has been considered best for high water discharge measurements. At the Mill Street bridge the section is slightly influenced by the pumping station of the North Works, which returns their pumpage just below the bridge, so that when the plant is in operation about 10 second-feet pass around this section. At the Carnegie plate girder bridge the section is influenced by a low dam during low water but is considered a very good section for high water discharge measurements. The Wheatland bridge is not considered good for discharge measurements as the low water flow at this section is influenced by an eddy. Above a six foot stage, this station becomes valueless on account of the water overflowing on the west side of the bridge, while the water at all stages passes under it at an angle. Discharge measurements at both the Carnegie plate girder bridge and the Wheatland bridge are reduced owing to the fact that the drainage area at the gage is 13 per cent. less than at these sections, due to Big and Little Yankee runs entering the parent stream just below the gage.

Since the establishment of this station 60 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF SHENANGO RIVER, AT SHARON, MERCER COUNTY, PENNA.

(Drainage area 605 square miles.)

No.	Date.	Hydrographer.	Width	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	sec.-ft.	
1	1908 Sept. 23,	Langenheim, ----------	30	22	1.31	------	29	Msmt. taken at New Castle by wading. Referenced.
2	1909 July 30,	Grant, ----------------	101	128	0.57	2.35	74	Wading msmt. at Sta. "A."
3	Aug. 5,	Powell, ---------------	100	123	0.60	2.33	73	Wading msmt. at Sta. "A."
4	Aug. 9,	do.	100	111	0.42	2.20	47	Wading msmt. at Sta. "A."
5	Aug. 11,	Harris & Smith, ------	108	136	0.31	2.20	42	Wading msmt. at Sta. "B."
6	Aug. 28,	do.	107	136	0.30	2.18	40	Wading msmt. at Sta. "B."
7	Aug. 30,	do.	100	112	0.48	2.20	54	Sta. "A."
8	Aug. 31,	do.	107	130	0.33	2.20	43	Wading msmt. at Sta. "B."
9	Sept. 15,	do.	107	130	0.36	2.00	47	Wading msmt. at Sta. "B."
10	Sept. 15,	do.	100	112	0.41	2.00	55	Wading msmt. at Sta. "A."
11	Sept. 21,	do.	99	95	0.26	1.90	25	Wading msmt. at Sta. "A."
12	Sept. 27,	do.	106	115	0.23	1.90	27	Wading msmt. at Sta. "B."
13	Sept. 27,	do.	100	101	0.30	1.90	30	Wading msmt. at Sta. "A."
14	Oct. 11,	do.	107	124	0.26	2.00	32	Wading msmt. at Sta. "B."
15	Oct. 11,	do.	100	104	0.34	2.00	36	Wading msmt. at Sta. "A."
16	Oct. 19,	do.	100	100	0.26	2.10	26	Wading msmt. at Sta. "A."
17	Oct. 30,	do.	100	114	0.39	2.20	44	Wading msmt. at Sta. "A."
18	Oct. 30,	do.	106	129	0.24	2.20	30	Wading msmt. at Sta. "B."
19	Nov. 22,	do.	100	130	0.54	------	70	Wading msmt. at Sta. "A."
20	Dec. 31,	do.	100	124	0.44	2.20	55	Wading msmt. at Sta. "A."
21	1910 Jan. 25,	Powell, ---------------	155	631	2.97	5.40	1874	From Upper Wheatland bridge. Reduced 13% for drain. Area.
22	Feb. 2,	Harris & Smith, ------	155	446	2.27	4.40	1012	From Upper Wheatland bridge. Reduced 13% for drain. Area.
23	Feb. 16,	do.	147	328	2.16	3.60	709	From Upper Wheatland bridge. Reduced 13% for drain. Area.
24	Feb. 25,	do.	155	453	2.38	4.50	1080	From Upper Wheatland bridge. Reduced 13% for drain. Area.
25	Feb. 28,	do.	162	1533	5.03	9.30	7716	From Carnegie bridge. Reduced 13% for drainage area.

DISCHARGE MEASUREMENTS OF SHENANGO RIVER, AT SHARON, MERCER COUNTY.

(*Drainage area 605 square miles.*)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean Velocity.	Gage height.	Discharge.	Remarks.
	1910—Continued.		Feet.	Sq. ft.	Ft. per sec.	Feet.	sec. -ft.	
26	Mar. 1,	Powell,	162	1792	6.23	11.20	9707	From Carnegie bridge. Reduced 13% for drainage area.
27	Mar. 2,	Powell,	162	1994	6.37	12.70	12,699	From Carnegie bridge. Reduced 13% for drainage area.
28	Oct. 12,	Harris & Smith,	139	231	1.41	2.98	326	From Upper Wheatland bridge. Reduced 13% for drain. area.
29	Oct. 14,	do.	138	201	1.47	2.71	246	From Upper Wheatland bridge. Reduced 13% for drain. area.
30	Oct. 15,	do.	135	191	1.18	2.60	226	From Upper Wheatland bridge. Reduced 13% for drain. area.
31	Oct. 27,	do.	139	231	1.41	2.98	326	From Upper Wheatland bridge. Reduced 13% for drain. area.
32	Nov. 12,	do.	153	462	2.55	4.58	1,177	From Upper Wheatland bridge. Reduced 13% for drain. area.
33	Nov. 14,	do.	158	594	3.04	5.20	1,801	From Upper Wheatland bridge. Reduced 13% for drain. area.
34	Nov. 17,	do.	158	563	2.64	5.00	1,485	From Upper Wheatland bridge. Reduced 13% for drain. area.
35	Nov. 18,	do.	156	517	2.68	4.80	1,382	From Upper Wheatland bridge. Reduced 13% for drain. area.
36	Nov. 21,	do.	155	414	2.25	4.27	933	From Upper Wheatland bridge. Reduced 13% for drain. area.
37	Nov. 23,	do.	155	393	2.07	4.10	813	From Upper Wheatland bridge. Reduced 13% for drain. area.
38	Dec. 13,	do.	126	214	1.64	3.22	350	From Upper Wheatland bridge. Reduced 13% for drain. area.
39	Dec. 13,	do.	134	298	1.13	3.22	336	From Mill St. bridge Ten sec-ft. added for pumpage.
40	Dec. 27,	do.	140	460	2.59	4.47	1,192	From Mill St. bridge Ten sec-ft. added for pumpage.
41	Dec. 27,	do.	155	458	2.27	4.47	1,039	From Upper Wheatland bridge. Reduced 13% for drain. area.
42	Dec. 30,	Powell,	163	1324	3.59	8.80	4,757	From Carnegie bridge. Reduced 13% for drainage area.

DISCHARGE MEASUREMENTS OF SHENANGO RIVER, AT SHARON, MERCER COUNTY, PENNA.

(Drainage area 605 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1910—Concluded.							
43	Dec. 30,	Powell,	163	1245	3.91	9.00	4,874	From Carnegie bridge. Reduced 13% for drainage area.
	1911.							
44	Jan. 1,	Smith,	163	1119	2.81	7.70	3,149	From Carnegie bridge. Reduced 13% for drainage area.
45	Jan. 2,	Powell,	163	1255	3.38	8.20	4,241	From Carnegie bridge. Reduced 13% for drainage area.
46	Jan. 2,	Harris & Smith,	163	1301	3.50	8.30	4,555	From Carnegie bridge. Reduced 13% for drainage area.
47	Jan. 4,	do	163	1055	2.58	7.25	2,727	From Carnegie bridge. Reduced 13% for drainage area.
48	Jan. 4,	do	163	989	2.49	6.80	2,467	From Carnegie bridge. Reduced 13% for drainage area.
49	Jan. 5,	do	163	927	2.34	6.40	2,172	From Carnegie bridge. Reduced 13% for drainage area.
	1912.							
50	April 16,	Ferris,	162	1196	3.43	7.65	3570	From Carnegie Bridge. Reduced 13% for drainage area.
51	April 16,	do	162	1136	3.39	7.34	3350	From Carnegie Bridge. Reduced 13% for drainage area.
52	April 27,	do	162	987	2.61	6.38	2230	From Carnegie Bridge. Reduced 13% for drainage area.
53	April 17,	do	162	991	2.66	6.33	2290	From Carnegie Bridge. Reduced 13% for drainage area.
54	April 18,	Haslam,	139	392	4.24	5.94	1660	From Mill Street Bridge 10 sec.-ft. added for pumpage.
55	Aug. 16,	Ferris,	104	141	0.79	2.50	112	From Mill Street Bridge 10 sec.-ft. added for pumpage.
56	Oct. 9,	Boehringer,	122	113	0.96	2.40	108	From Upper Wheatland Bridge. Reduced 13% for drainage area.
57	Oct. 25,	Haslam,	175	2140	3.01	9.36	6440	From State St. Bridge.
58	Oct. 25,	do	175	2135	2.89	9.33	6160	From State Street Bridge.
59	Oct. 25,	do	175	2115	3.03	9.23	6400	From State Street Bridge.
60	Oct. 26,	do	175	2035	2.40	8.82	4890	From State Street Bridge.

All gage heights and discharges are referred to the Chestnut Street gage.

DISCHARGE TABLE FOR SHENANGO RIVER, AT SHARON, MERCER COUNTY, FROM AUG. 1, 1909.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.70	20	.10	655	.50	2190	.90	5535	.30	10478
.80	23	.20	700	.60	2280	9.00	5740	.40	10684
.90	27	.30	745	.70	2375	.10	5946	.50	10890
2.00	30	.40	792	.80	2470	.20	6152	.60	11096
.10	37	.50	840	.90	2575	.30	6358	.70	11302
.20	46	.60	890	7.00	2680	.40	6564	.80	11508
.30	63	.70	940	.10	2790	.50	6770	.90	11714
.40	87	.80	990	.20	2900	.60	6976	12.00	11920
.50	112	.90	1040	.30	3020	.70	7182	.10	12126
.60	138	5.00	1095	.40	3140	.80	7388	.20	12332
.70	164	.10	1150	.50	3270	.90	7594	.30	12538
.80	190	.20	1210	.60	3400	10.00	7800	.40	12744
.90	218	.30	1270	.70	3535	.10	8006	.50	12950
3.00	248	.40	1335	.80	3670	.20	8212	.60	13156
.10	278	.50	1400	.90	3815	.30	8418	.70	13362
.20	310	.60	1470	8.00	3960	.40	8624	.80	13568
.30	343	.70	1540	.10	4120	.50	8830	.90	13774
.40	376	.80	1610	.20	4280	.60	9036	13.00	13980
.50	411	.90	1685	.30	4440	.70	9242	.50	15010
.60	448	6.00	1760	.40	4610	.80	9448	14.00	16040
.70	486	.10	1840	.50	4780	.90	9654	.50	17070
.80	527	.20	1920	.60	4960	11.00	9860	15.00	18100
.90	569	.30	2010	.70	5150	.10	10066	.50	19140
4.00	612	.40	2100	.80	5340	.20	10272	16.00	20160

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SHENANGO RIVER, AT SHARON, MERCER COUNTY, PENNA.

1909. Day.	AUG.		SEPT.		OCT.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.35	75	2.20	46	1.90	27	-----	-----
2,	2.33	70	2.20	46	1.90	27	-----	-----
3,	2.33	70	2.05	33	1.90	27	-----	-----
4,	2.25	54	2.30	63	1.95	28	-----	-----
5,	2.20	46	2.20	46	1.95	28	-----	-----
6,	2.20	46	2.10	37	1.90	27	-----	-----
7,	2.20	46	2.10	37	1.95	28	-----	-----
8,	2.20	46	2.05	33	2.00	30	-----	-----
9,	2.20	46	2.10	37	2.00	30	-----	-----
10,	2.20	46	2.20	46	1.95	28	-----	-----
11,	2.20	46	2.15	41	2.05	33	-----	-----
12,	2.18	44	2.20	46	2.05	33	-----	-----
13,	2.15	41	2.05	33	2.05	33	-----	-----
14,	2.15	41	2.05	33	2.10	37	-----	-----
15,	2.14	40	2.05	33	2.10	37	-----	-----
16,	2.18	44	1.95	28	2.05	33	-----	-----
17,	2.10	37	1.95	28	2.10	37	-----	-----
18,	2.15	41	1.95	28	2.05	33	-----	-----
19,	2.30	63	2.00	30	2.10	37	-----	-----
20,	2.18	44	2.00	30	2.10	37	-----	-----
21,	2.20	46	1.95	28	2.15	41	-----	-----
22,	2.20	46	1.95	28	2.15	41	-----	-----
23,	2.22	49	1.95	28	2.05	33	-----	-----
24,	2.20	46	2.00	30	2.05	33	-----	-----
25,	2.19	45	2.00	30	2.10	37	-----	-----
26,	2.22	49	2.00	30	*2.10	37	-----	-----
27,	2.19	45	1.95	28	*2.05	33	-----	-----
28,	2.20	46	1.95	28	2.05	33	-----	-----
29,	2.20	46	1.90	27	2.20	46		
30,	2.20	46	1.95	28	2.20	46		
31,	2.20	46	-----	-----	*2.20	46	2.20	46

*Estimated. Stream frozen Oct. 30, to Dec. 30, 1909.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SHENANGO RIVER, AT SHARON, MERCER COUNTY, PENNA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.35	75	4.59	885	10.74	9320	2.80	190	*	1010	3.20	310	2.20	46	2.10	37	1.80	23	2.30	63	3.00	248	4.67	925
2,	2.40	87	4.36	773	12.81	13600	2.75	177	4.95	1070	3.50	411	2.20	46	2.10	37	1.90	27	2.20	46	3.10	278	4.60	890
3,	2.45	100	4.38	783	12.18	12300	2.75	177	5.20	1210	4.00	612	2.27	58	2.10	37	2.20	46	2.20	46	3.40	376	4.40	792
4,	2.70	164	4.90	1040	11.36	10600	3.20	310	6.50	2190	4.40	792	*	63	2.10	37	2.60	138	2.20	46	3.40	376	4.35	768
5,	2.80	190	5.12	1160	10.74	9320	3.95	590	6.60	2280	4.21	704	*	63	2.10	37	2.35	75	2.25	54	3.30	343	4.20	700
6,	2.80	190	4.80	990	10.55	8930	3.85	548	6.05	1800	4.25	722	*	75	2.10	37	2.80	190	3.60	448	*	326	4.10	655
7,	2.80	190	4.45	816	9.79	7370	3.75	506	5.00	1090	4.00	612	2.40	87	*	34	2.70	164	4.15	678	3.15	294	4.08	646
8,	2.80	190	4.10	655	9.89	7570	3.80	527	*	840	3.70	486	2.40	87	2.00	30	2.60	138	3.80	527	2.95	233	3.95	590
9,	2.95	233	3.95	590	7.28	3000	3.80	527	4.00	612	3.35	360	2.30	63	2.00	30	2.40	87	*	448	2.90	218	3.70	486
10,	2.95	233	3.79	523	6.00	1760	3.50	411	3.70	486	3.20	310	*	60	2.00	30	2.30	63	3.10	278	3.00	248	3.40	376
11,	*	218	3.50	411	5.21	1220	3.20	310	3.35	300	3.10	278	2.25	54	2.00	30	*	37	3.00	248	3.90	569	3.40	376
12,	*	204	3.50	411	5.12	1160	3.05	203	3.15	294	2.99	245	2.20	46	1.90	27	2.20	46	2.90	218	4.70	940	3.40	376
13,	2.80	190	3.40	376	*	1120	2.90	218	3.10	278	3.10	278	2.60	138	1.90	27	2.30	63	2.80	190	4.88	1030	3.35	360
14,	2.80	190	3.28	336	4.96	1070	2.85	204	3.10	278	3.00	248	2.50	112	1.90	27	2.29	61	2.70	164	4.45	816	3.30	343
15,	*	185	3.16	298	4.12	664	2.70	164	*	233	2.90	218	2.50	112	1.90	27	2.10	37	2.60	138	5.25	1240	3.25	326
16,	*	180	3.60	448	3.96	595	2.70	164	2.80	190	2.85	204	2.30	63	1.90	27	2.20	46	*	112	5.10	1150	3.20	310
17,	2.75	177	4.32	350	3.90	569	2.65	151	2.70	164	2.80	190	*	63	1.90	27	2.20	40	2.40	87	5.10	1150	3.10	278
18,	4.30	745	4.60	890	3.80	527	2.60	138	2.95	233	2.90	218	2.30	63	2.00	30	*	30	2.40	87	4.75	965	3.10	278
19,	6.55	2230	4.60	890	3.70	486	2.70	164	2.75	177	*	177	2.20	46	1.90	27	1.75	22	2.35	75	4.55	865	3.10	278
20,	6.80	2470	4.60	890	3.70	486	2.80	190	2.75	177	2.60	138	2.10	37	1.90	27	1.70	20	2.30	63	4.31	788	3.00	248
21,	6.75	2380	4.45	816	3.60	448	3.25	326	2.85	204	2.45	100	2.10	37	1.90	27	1.70	20	2.25	54	4.25	722	3.25	326
22,	7.05	2740	4.72	950	3.65	467	3.25	326	*	506	2.50	112	*	39	1.90	27	1.70	20	2.40	87	4.15	678	3.30	343
23,	6.45	2140	4.82	1000	3.60	448	3.20	310	4.20	700	2.50	112	*	42	1.90	27	1.85	25	2.35	75	4.10	655	3.40	376
24,	5.88	1670	4.60	890	3.50	411	3.19	307	3.75	506	2.35	75	*	44	1.90	27	2.90	218	2.40	87	4.40	792	3.20	310
25,	5.40	1335	4.50	840	3.40	376	4.90	1040	3.35	360	2.30	63	2.20	46	1.88	26	3.20	310	2.50	112	5.30	1270	*	486
26,	5.18	1200	4.25	722	3.35	360	6.95	2630	3.35	360	2.35	75	2.20	46	1.90	27	2.80	190	2.80	190	5.40	1340	4.20	700
27,	5.35	1300	4.65	915	*	326	5.95	1720	3.15	294	2.20	46	2.20	46	1.88	26	2.60	138	3.00	248	5.10	1150	4.40	792
28,	5.62	1480	8.75	5240	3.10	278	5.85	1650	3.10	278	2.10	37	2.10	37	1.85	25	2.60	138	2.90	218	5.00	1090	4.65	915
29,	5.42	1350	------	------	3.05	263	5.20	1210	3.10	278	2.10	37	2.10	37	1.90	27	2.50	112	3.00	248	4.95	1060	7.30	3020
30,	5.05	1120	------	------	2.90	218	4.75	965	2.95	233	2.20	46	2.10	37	1.85	25	2.40	87	3.05	263	4.90	1040	8.55	4870
31,	4.65	915	------	------	2.85	204	------	------	3.15	294	------	------	------	------	1.84	25	------	------	3.10	278	------	------	8.80	5340

*Discharge estimated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF SHENANGO RIVER, AT SHARON, MERCER COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	7.70	3535	5.20	1210	4.35	768	5.19	1204	4.75	965	2.80	190	2.62	143	2.04	33	3.33	353	9.05	5843	3.10	278	4.08	646
2,	8.30	4440	5.00	1095	4.10	655	4.85	1015	4.80	990	2.80	190	2.55	125	2.02	32	3.15	294	8.71	5169	3.82	535	4.00	612
3,	9.12	5986	4.58	880	3.90	569	4.60	880	4.50	840	2.60	138	2.55	125	2.07	35	3.05	263	7.31	3032	3.70	486	3.82	535
4,	7.10	2790	4.50	840	3.69	482	4.42	802	4.50	840	2.60	138	2.35	75	2.27	58	2.84	201	6.06	1808	3.82	535	3.74	502
5,	6.40	2100	4.30	745	3.40	376	6.12	1856	4.30	745	2.40	87	2.11	38	2.53	120	2.84	201	5.78	1596	4.10	655	3.56	433
6,	5.55	1435	4.10	655	3.38	369	6.17	1896	4.00	612	2.35	75	2.00	30	2.27	58	2.87	210	5.18	1198	4.10	655	3.42	383
7,	5.02	1106	4.10	655	3.45	393	5.20	1210	3.75	506	2.32	68	1.99	30	2.14	41	2.90	218	6.90	2575	5.20	1210	3.46	397
8,	4.78	980	4.10	655	3.30	343	4.85	1015	3.20	310	2.30	63	1.94	28	2.05	34	2.75	177	5.90	1685	5.40	1335	3.64	463
9,	4.97	1978	4.00	612	3.30	343	4.67	925	3.10	278	2.25	54	1.85	25	2.07	35	2.91	221	4.91	1046	4.84	1010	4.04	629
10,	4.30	745	4.00	612	3.70	486	4.52	850	3.10	278	2.12	31	2.11	38	2.00	34	*3.15	294	4.68	930	4.61	895	5.40	1335
11,	4.32	754	3.60	448	4.10	655	4.25	722	3.10	278	1.90	27	2.85	204	2.02	31	3.35	360	4.60	890	4.50	840	4.91	1045
12,	7.50	3270	*3.65	467	3.90	569	4.25	722	3.00	248	2.52	117	2.45	100	1.99	30	3.04	260	4.37	778	4.45	816	5.50	1400
13,	8.26	4376	3.70	486	4.20	700	4.20	700	2.80	190	2.95	233	2.42	92	1.99	30	2.79	177	4.21	705	5.18	1198	7.81	3684
14,	8.50	4780	5.40	1335	4.15	677	4.80	990	2.80	190	2.62	143	2.26	56	1.95	28	2.62	143	3.90	569	4.67	925	8.09	4104
15,	9.85	7491	7.40	3140	3.85	548	5.00	1095	2.70	164	2.45	100	2.12	39	1.97	29	9.98	7759	3.65	467	4.40	792	8.18	4248
16,	9.15	6049	6.95	2627	3.80	527	4.47	826	2.70	164	2.30	63	1.95	28	2.02	31	12.48	12908	3.54	426	4.46	821	7.93	3861
17,	6.29	2001	7.10	2790	3.70	486	4.42	802	2.70	164	2.23	51	2.30	63	2.12	39	9.95	7697	3.38	369	4.30	745	6.86	2533
18,	5.47	1380	7.80	3670	4.10	655	4.12	664	2.80	190	2.15	41	2.00	30	2.40	87	6.69	2366	8.04	4024	6.67	2346	6.05	1800
19,	4.92	1051	7.59	3387	4.69	935	4.25	722	2.90	218	2.10	37	1.95	28	2.45	100	5.50	1400	8.20	4280	6.89	2669	5.34	1296
20,	4.32	754	6.10	1840	4.72	950	5.80	1610	2.90	218	2.10	37	1.92	27	2.30	63	4.96	1073	6.25	1965	6.00	1760	4.90	1040
21,	4.10	655	5.48	1387	4.47	826	5.10	1150	3.00	248	2.08	36	1.90	27	2.03	32	4.48	830	6.03	1784	5.96	1730	4.48	811
22,	3.85	548	4.98	1084	4.10	655	6.25	1965	2.75	177	2.00	30	2.00	30	2.03	32	4.01	616	5.29	1264	5.45	1367	4.27	731
23,	3.55	429	4.40	792	4.48	830	6.75	2422	2.80	190	1.95	28	2.00	30	2.00	30	3.56	433	5.08	1139	5.00	1095	5.30	1270
24,	3.25	326	4.20	700	4.24	718	5.45	1367	2.80	190	1.95	28	2.27	58	2.20	46	3.36	365	5.61	1477	4.94	1062	5.30	1270
25,	3.15	294	4.35	780	3.90	569	4.75	965	2.90	218	2.05	33	2.25	54	2.26	56	3.16	297	4.19	696	5.15	1180	5.00	1095
26,	3.25	326	4.83	1005	3.80	527	4.25	722	2.60	138	2.06	34	2.20	46	2.29	61	3.05	263	3.86	552	4.67	925	4.96	1073
27,	3.29	340	5.15	1180	3.85	548	4.10	655	2.60	138	2.95	233	2.20	46	2.45	100	2.86	207	3.68	478	4.60	890	5.50	1400
28,	8.22	4312	4.50	840	4.77	975	4.00	612	2.40	87	5.05	1122	2.15	41	3.64	463	3.09	275	3.54	426	4.50	840	5.50	1400
29,	8.68	5112	-----	-----	4.50	840	4.50	840	2.20	46	3.30	343	2.15	41	7.10	2790	4.74	960	3.46	397	4.58	880	4.50	840
30,	8.23	4328	-----	-----	4.70	940	4.22	709	1.90	27	2.75	177	2.07	35	5.39	1328	5.19	1200	3.34	356	4.35	768	4.51	845
31,	7.20	2900	-----	-----	5.39	1328	-----	-----	1.90	27	-----	-----	2.05	34	3.77	515	-----	-----	3.38	369	-----	-----	5.87	1662

*Interpolated

ESTIMATED MONTHLY DISCHARGE OF SHENANGO RIVER, AT SHARON, MERCER COUNTY.

(Drainage area 605 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
a1909.					
August,	75	37	48	0.080	0.092
September,	63	27	35	0.057	0.064
October,	46	27	34	0.056	0.065
1910.					
January,	2740	75	844	1.395	1.608
February,	5240	298	889	1.469	1.530
March,	13600	204	3080	5.090	5.868
April,	2630	138	547	0.904	1.008
May,	2280	164	612	1.012	1.166
June,	792	37	274	0.453	0.505
July,	138	37	60	0.099	0.111
August,	37	25	29	0.049	0.057
September,	310	20	87	0.144	0.160
October,	678	46	190	0.313	0.361
November,	1340	218	742	1.226	1.368
December,	5340	248	886	1.465	1.689
The year,	13600	20	687	1.135	15.433
1911.					
January,	7491	294	2441	4.035	4.652
February,	3670	448	1283	2.120	2.208
March,	1328	343	653	1.079	1.244
April,	2422	612	1064	1.759	1.963
May,	990	27	318	0.526	0.607
June,	1122	27	132	0.218	0.243
July,	204	25	57	0.094	0.108
August,	2790	28	206	0.341	0.393
September,	12908	143	1401	2.315	2.583
October,	5843	356	1558	2.575	2.969
November,	2669	278	1041	1.721	1.920
December,	4248	383	1395	2.306	2.659
The year,	12908	25	962	1.591	21.55

a River frozen Oct. 30 to Dec. 30, 1909,

NESHANNOCK CREEK.

DESCRIPTION OF BASIN.

Neshannock creek, the largest tributary of the Shenango river drains approximately 245 square miles in Mercer and Lawrence counties. Rising in and passing through numerous extensive swamp areas, in the central and eastern part of Mercer county, its two branches, Otter and Mill creeks, join near Mercer borough, and the main stream then follows a general southerly direction for about 23 miles to its mouth at New Castle, Lawrence county, the general outline of the watershed being pear shaped. The upper sections of this stream in Mercer county flow through a deforested, rolling country, in which farming and some bituminous coal mining is carried on. The stream is sluggish in its upper portions, and the basin is covered to a great depth by deposits of glacial drift, but upon entering Lawrence county, it becomes a rapid stream, with numerous falls, flowing through a narrow gorge with high steep walls of sandstone. From Hope Mills, Mercer county (elevation 1107′) to New Castle (elevation 799′) a distance of 20 miles, the rate of fall is about 15 feet per mile. The chief tributaries are Otter, Mill and Little Neshannock creeks. Numerous boroughs, farming and mining villages lie in this basin, but the stream is not used for domestic water supply, and, to a limited extent, for industrial purposes, by plants in the vicinity of its mouth.

The mean annual precipitation over this watershed is from 35 to 45 inches.

The discharge has been measured since August 9, 1909, at New Castle, Pa., near the mouth.

OHIO BASIN—STATION NO. 21.

NESHANNOCK CREEK AT NEW CASTLE, PA.

DESCRIPTION OF STATION.

This station was established by the Carnegie Steel Company, in co-operation with the Water Supply Commission of Pennsylvania, on August 9, 1909, and is locatd at the Jefferson Street Bridge, New Castle, Penn'a.

The channel is straight for one-fourth mile above and for 300 yards below the station, but immediately at the station the creek makes a thirty degree bend to the right. Both banks are high, but overflow during extreme high water. The bed of the stream consists of stones, mud and slime and is not permanent. During extreme high floods in Shenango river, water may be backed up to near Jefferson Street bridge, but this occurs very seldom.

Discharge measurements are taken from the downstream side of the Jefferson Street bridge and by wading either above or below the bridge. The initial point for soundings is the face of the left abutment, on the downstream side of the bridge.

A staff gage, known as No. 2 of the three gages established by the Carnegie Steel Company, is fastened to a retaining wall on the left side of the creek, just below the left bridge abutment. The elevation of zero is arbitrary datum. Bench mark No. 1 is a cross on the bridge wall at the left side of the bridge; elevation 6.82 feet above gage datum. The gage is read twice daily by D. B. Woolcock, Civil Engineer of the Carnegie Steel Company.

Since the establishment of this station 12 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF NESHANNOCK CREEK, AT NEW CASTLE, LAWRENCE COUNTY, PENNA.

(Drainage area 240 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
	1909.		Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.	
1	Aug. 13,	Woods,	38	53	0.76	*1.50	40	No. 2 Gage=0.90
2	Aug. 17,	do.	38	51	1.16	1.70	54	No. 2 Gage=1.13
3	Sept. 14,	do.	38	54	1.55	1.80	72	No. 2 Gage=1.20
	1910.							
4	Dec. 31,	Woolcock,	108	473	3.57	†4.58	1690	Slush ice running. Not accurate.
	1911.							
5	Jan. 10,	do.	98	257	2.08	2.54	534	
6	Jan. 14,	do.	118	691	6.50	6.27	4592	
7	Feb. 4,	do.	103	386	3.80	3.79	1470	
8	Feb. 11,	do.	83	169	1.22	1.81	206	
9	April 27,	do.	92	229	1.91	2.34	437	
10	April 28,	do.	92	222	1.77	2.27	394	
11	July 18,	Langenheim,	47	33	1.03	1.02	34	Wading msmt.
	1912.							
12	Oct. 8,	Boehringer,	70	138	0.57	1.82	78	0.6 msmt.

*Gage No. 1.
†Gage No. 2.

DISCHARGE TABLE FOR NESHANNOCK CREEK, AT NEW CASTLE, LAWRENCE COUNTY, FROM AUGUST 9, 1909.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.70	15	.30	415	.80	1480	.30	3290	.80	5350
.80	25	.40	460	.90	1580	.40	3425	.90	5490
.90	35	.50	510	4.00	1680	.50	3560	7.00	5630
1.00	45	.60	565	.10	1780	.60	3695	.10	5770
.10	58	.70	625	.20	1885	.70	3830	.20	5910
.20	73	.80	685	.30	2000	.80	3965	.30	6050
.30	90	.90	750	.40	2115	.90	4100	.40	6190
.40	110	3.00	815	.50	2230	6.00	4235	.50	6335
.50	130	.10	885	.60	2355	.10	4370	.60	6480
.60	155	.20	960	.70	2485	.20	4510	.70	6625
.70	185	.30	1035	.80	2615	.30	4650	.80	6770
.80	215	.40	1115	.90	2750	.40	4790	.90	6915
.90	250	.50	1200	5.00	2885	.50	4930	8.00	7060
2.00	285	.60	1290	.10	3020	.60	5070	.10	7205
.10	325	.70	1385	.20	3155	.70	5210	.20	7350
.20	370								

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NESHANNOCK CREEK, AT NEW CASTLE, LAWRENCE COUNTY, PENNA

1909. Day.	AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	0.96	41	1.03	49	0.87	32	1.05	52
2,	------	------	0.96	41	1.11	60	1.16	67	0.99	44
3,	------	------	0.98	43	1.06	53	1.00	45	1.18	70
4,	------	------	1.00	45	0.88	33	1.01	46	1.15	66
5,	------	------	1.10	58	1.13	63	1.02	48	1.16	67
6,	------	------	1.06	53	1.00	45	1.12	61	0.85	30
7,	------	------	0.97	42	0.92	37	0.97	42	1.14	64
8,	------	------	1.04	50	1.01	46	0.98	43	1.08	55
9,	0.90	35	0.86	31	0.98	43	1.09	57	0.99	44
10,	0.95	40	1.04	50	1.08	55	1.15	66	0.94	39
11,	0.92	37	1.08	55	0.80	25	1.07	54	1.10	58
12,	0.95	40	1.12	61	1.03	49	0.98	43	0.94	39
13,	0.98	43	0.86	31	1.04	50	1.05	52	1.16	67
14,	0.95	40	0.93	38	1.02	48	1.08	55	*1.70	185
15,	1.08	55	1.06	53	1.04	50	1.01	46	1.36	102
16,	1.10	58	0.92	37	1.04	50	1.15	66	1.41	112
17,	1.14	64	1.04	50	0.95	40	1.20	73	1.30	90
18,	1.08	55	1.00	45	0.96	41	1.22	76	1.04	50
19,	1.08	55	1.07	54	1.01	46	1.34	98	1.02	48
20,	0.96	41	0.88	33	1.03	49	1.05	52	1.00	45
21,	0.99	44	1.01	46	0.98	43	1.10	58	1.06	53
22,	1.01	46	0.84	29	1.07	54	1.10	58	0.94	39
23,	0.95	40	1.02	48	1.11	60	1.25	82	0.96	41
24,	1.00	45	0.92	37	1.10	58	1.28	87	1.10	58
25,	1.00	45	1.06	53	1.18	70	1.28	87	1.10	58
26	1.02	48	0.98	43	1.11	60	1.15	66	1.02	48
27,	1.08	55	0.85	30	1.12	61	1.10	58	1.00	45
28,	0.97	42	1.02	48	1.06	53	1.01	46	1.09	57
29,	1.06	53	0.98	43	1.06	53	1.10	58	1.20	73
30,	0.99	44	1.04	50	1.08	55	1.00	45	1.04	50
31,	1.07	54	------	------	1.04	50	------	------	1.07	54

*Maximum 1.92 feet at 5 p. m.—257 sec. ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NESHANNOCK CREEK, AT NEW CASTLE, LAWRENCE COUNTY, PENNA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.12	61	2.28	406	*8.16	7292	1.51	132	2.10	325	1.92	257	0.99	44	0.88	33	0.90	35	1.20	73	1.82	222	1.90	250
2,	1.21	75	2.15	348	7.36	6134	1.45	120	2.10	325	2.30	415	0.94	39	1.02	48	0.90	35	1.15	66	1.87	240	1.90	250
3,	1.40	110	2.22	379	6.90	5490	1.46	122	2.25	392	2.42	470	0.94	39	0.90	35	1.03	49	1.05	52	2.40	460	1.97	274
4,	1.55	142	2.88	737	6.07	4330	1.55	142	2.70	625	2.35	438	1.32	94	0.95	40	1.05	52	1.15	66	1.98	278	2.00	285
5,	1.45	120	3.00	815	5.66	3776	3.04	843	2.20	370	2.00	285	1.35	100	0.98	43	1.65	170	1.12	61	1.80	215	1.92	257
6,	1.44	118	2.70	625	5.44	3479	2.61	571	1.70	185	1.75	200	1.05	52	0.95	40	1.20	73	3.15	922	1.82	222	1.68	179
7,	1.30	90	2.28	406	5.70	3830	2.24	388	1.45	120	1.65	170	1.60	155	0.95	40	1.30	90	3.80	1480	1.85	232	1.62	161
8,	1.52	135	2.10	325	4.57	2318	2.00	285	1.40	110	1.58	150	1.74	197	0.80	25	0.94	39	2.78	673	1.49	128	1.64	167
9,	1.46	122	2.05	305	3.99	1670	1.82	222	1.40	110	1.48	126	1.48	126	0.98	43	1.10	58	2.32	424	1.56	145	1.62	161
10,	1.39	108	1.94	264	3.00	815	1.76	203	1.40	110	1.40	110	1.25	82	0.92	37	1.10	58	1.80	215	1.54	140	1.55	142
11,	1.38	106	1.72	191	2.75	655	1.75	200	1.58	150	1.38	106	1.10	58	1.05	52	0.90	35	1.60	155	2.30	415	1.72	191
12,	1.32	94	1.73	194	2.68	613	1.54	140	1.51	132	1.35	100	1.20	73	1.05	52	0.82	27	1.45	120	2.35	438	1.80	215
13,	1.31	92	1.76	203	2.60	565	1.48	126	1.46	122	1.35	100	1.74	197	0.97	42	0.95	40	1.30	90	2.46	490	1.56	145
14,	1.24	80	1.70	185	2.52	521	1.42	114	1.40	110	1.28	87	1.72	191	0.92	37	1.10	58	1.42	114	2.60	565	1.82	222
15,	1.28	87	1.75	200	2.34	433	1.38	106	1.40	110	1.35	100	1.42	114	0.85	30	1.05	52	1.35	100	2.52	521	1.62	161
16,	1.24	80	2.32	424	2.28	406	1.42	114	1.36	102	1.55	142	1.18	70	1.04	50	1.02	48	1.35	100	2.50	510	1.59	152
17,	1.36	102	3.52	1218	2.20	370	1.46	122	1.29	88	1.41	112	1.38	106	0.88	33	0.92	37	1.35	100	2.48	500	1.48	126
18,	1.86	236	3.10	885	2.14	343	1.44	118	1.46	122	1.20	73	1.28	87	0.94	39	0.84	29	1.30	90	2.42	470	1.60	155
19,	6.50	4930	3.05	850	2.06	309	1.48	126	1.58	150	1.23	78	1.08	55	1.05	52	0.78	23	1.25	82	2.18	361	1.72	191
20,	6.27	4608	3.00	815	2.12	334	1.81	218	1.42	114	1.42	114	1.05	52	1.05	52	1.08	55	1.10	58	2.08	317	1.92	257
21,	5.87	4060	2.90	750	2.30	415	2.20	370	1.50	130	1.28	87	1.08	55	0.87	32	0.94	39	1.15	66	1.95	268	1.66	173
22,	3.30	1035	3.58	1272	2.08	317	2.03	297	1.53	138	1.28	87	1.00	45	0.76	21	0.90	35	1.50	130	1.95	268	1.66	173
23,	2.60	565	3.28	1020	1.95	268	1.84	229	1.68	179	0.92	37	1.08	55	0.90	35	0.95	40	1.60	155	2.05	305	1.76	203
24,	2.68	613	2.95	782	1.90	250	1.94	264	1.64	167	1.05	52	1.10	58	0.90	35	2.58	554	1.52	135	2.50	510	2.46	490
25,	2.48	500	2.65	595	1.88	243	3.85	1530	2.15	348	1.00	45	1.02	48	0.90	35	4.30	2000	1.50	130	3.05	850	2.78	673
26,	2.35	438	2.50	510	1.86	236	4.57	2318	2.05	305	0.94	39	1.05	52	1.10	58	3.92	1600	1.75	200	2.75	655	2.72	637
27,	2.78	673	3.10	885	1.74	197	3.44	1149	1.70	185	1.08	55	1.02	48	1.11	60	2.35	438	1.70	185	2.70	625	2.65	595
28,	3.10	885	6.94	5546	1.62	161	2.75	655	1.50	130	1.15	66	1.02	48	0.95	40	1.88	243	2.20	370	2.10	325	2.56	543
29,	2.89	744	------	------	1.54	140	2.35	438	1.50	130	1.08	55	1.02	48	0.90	35	1.55	142	1.98	278	1.98	278	5.94	4154
30,	2.68	613	------	------	1.56	145	2.25	392	1.50	130	1.06	53	1.02	48	1.02	48	1.40	110	2.00	285	1.90	250	†6.44	4846
31,	2.52	521	------	------	1.56	145	------	------	1.70	185	------	------	1.02	48	0.80	25	------	------	1.92	257	------	------	4.07	1750

*Maximum 8.24 feet=7408 sec. ft.
†Maximum 6.82 feet=5378 sec. ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF NESHANNOCK CREEK, AT NEW CASTLE, LAWRENCE COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.95	1630	2.66	601	2.50	510	3.00	815	3.58	1270	1.28	87	1.28	87	.98	43	1.64	167	‡10.37	*10500	3.12	900	2.30	415
2,	4.16	1840	2.65	595	2.46	490	2.89	744	3.38	1100	1.32	94	1.15	66	.88	33	1.30	90	8.86	*8300	2.71	631	2.30	415
3,	3.70	1380	2.52	521	2.25	392	2.62	577	2.92	763	1.32	94	1.04	50	1.02	48	1.14	64	4.92	2780	2.54	532	2.21	374
4,	3.11	892	3.71	1390	2.16	352	2.69	619	2.58	554	1.50	130	.95	40	1.16	67	.80	25	4.08	1760	2.25	392	2.21	374
5,	2.81	692	3.86	1540	2.06	309	3.92	1600	2.21	374	1.68	179	.90	35	1.00	45	1.04	50	3.38	1100	2.23	384	2.30	415
6,	2.74	649	3.17	938	2.03	297	3.79	1470	2.00	285	1.55	142	1.02	48	1.11	60	1.54	140	2.87	730	3.04	843	2.12	334
7,	2.63	583	2.63	583	1.84	229	3.84	1520	1.78	209	1.58	150	.93	38	1.15	66	1.71	188	4.96	2830	3.62	1310	2.00	285
8,	2.70	625	2.63	583	1.95	268	3.18	945	1.71	188	1.35	100	.88	33	1.25	82	1.96	271	4.20	1880	3.08	871	2.21	374
9,	2.78	673	2.50	510	2.16	352	3.08	871	1.71	188	1.25	82	.84	29	1.24	80	1.54	140	3.17	938	2.58	554	2.96	789
10,	2.36	442	2.46	490	2.98	802	3.08	871	1.66	173	1.35	100	.90	35	1.03	49	1.48	126	2.75	655	2.30	415	3.14	915
11.	2.36	442	2.28	406	2.96	789	2.71	631	1.70	185	1.48	126	1.01	46	.96	41	1.80	215	2.67	607	2.34	433	3.21	968
12,	4.66	2430	2.55	538	2.92	763	2.54	532	1.68	179	1.78	209	.98	43	.92	37	1.92	257	2.75	655	2.52	521	4.08	1760
13,	4.40	2110	2.54	532	2.88	737	2.71	631	1.58	150	1.72	191	.96	41	.84	29	1.54	140	2.34	433	3.00	815	5.54	3610
14,	5.86	4050	3.46	1170	2.62	577	2.88	737	1.54	140	1.65	170	1.11	60	.79	24	1.25	82	2.18	361	2.58	554	4.84	2670
15,	5.45	3490	5.29	3280	2.58	554	3.80	1480	1.50	130	1.30	90	1.00	45	.95	40	†7.49	6320	2.14	343	2.29	410	5.34	3340
16,	3.77	1450	4.54	2280	2.30	415	3.04	843	1.40	110	1.28	87	.96	41	.84	29	7.30	6050	2.12	334	2.50	510	4.30	2000
17,	2.82	698	3.71	1390	2.17	356	2.92	763	1.45	120	1.20	73	.92	37	1.04	50	4.85	2680	2.30	415	2.41	465	3.81	1490
18,	2.57	548	4.42	2140	3.58	1270	2.55	538	1.50	130	1.20	73	.96	41	.98	43	2.78	673	6.46	4870	5.00	2880	3.12	900
19,	2.40	460	4.01	1690	4.41	2130	2.62	577	1.50	130	1.18	70	.92	37	.98	43	2.12	334	4.54	2280	4.24	1930	2.87	730
20,	2.49	505	3.25	1000	4.75	2550	4.29	1990	1.45	120	1.07	54	1.11	60	.84	29	2.00	285	3.54	1240	3.25	998	2.79	679
21,	2.49	505	2.87	730	2.90	750	3.54	1240	1.45	120	1.08	55	1.05	52	.80	25	1.80	215	3.00	815	2.92	763	2.50	510
22,	2.22	379	2.71	631	2.58	554	4.08	1760	1.40	110	1.04	50	.98	43	.88	33	1.67	176	2.75	655	2.80	685	2.71	631
23,	1.98	278	2.67	607	3.24	990	4.50	2230	1.20	73	1.02	48	.88	33	.89	34	1.63	164	2.75	655	3.00	815	2.75	655
24,	2.00	285	2.62	577	2.79	679	3.88	1560	1.42	114	1.10	58	.76	21	.85	30	1.61	158	2.34	433	3.75	1430	2.77	667
25,	1.90	250	2.71	631	2.71	631	2.96	789	1.42	114	1.50	130	1.02	48	1.28	87	1.58	150	2.21	374	3.42	1130	2.83	705
26,	2.00	285	3.26	1010	2.73	643	2.79	679	1.40	110	2.02	293	.98	43	1.52	135	1.80	215	2.17	356	3.09	878	2.80	685
27,	2.60	565	3.67	1360	2.84	711	2.34	433	1.12	61	1.62	161	.82	27	1.50	130	1.71	188	2.09	321	2.88	737	3.84	1520
28,	6.11	4380	2.88	737	3.04	843	2.29	410	1.18	70	1.52	135	.92	37	2.62	577	2.13	338	1.92	257	2.84	711	3.08	871
29,	5.54	3610	------	------	2.87	730	2.16	352	1.28	87	1.65	170	.97	42	3.88	1560	3.50	1200	1.92	257	3.00	815	2.34	433
30,	4.16	1840	------	------	3.00	815	2.57	548	1.18	70	1.50	130	.87	32	3.29	1030	4.06	1740	2.04	301	2.63	583	2.58	554
31,	2.53	526	------	------	3.25	998	------	------	1.25	82	------	------	.77	22	2.46	490	------	------	2.50	510	------	------	3.35	1080

†Maximum 8.63 feet at 5 p. m.=*7950 sec. ft.
‡Maximum 16.23 feet at 11 p. m.=*24000 sec. ft.
*Estimated.

ESTIMATED MONTHLY DISCHARGE OF NESHANNOCK CREEK, AT NEW CASTLE, LAWRENCE COUNTY.

(Drainage area 240 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1909.					
September,	61	29	45	0.188	0.210
October,	63	25	50	0.208	0.240
November,	98	32	59	0.246	0.275
December,	257	30	61	0.254	0.293
1910.					
January,	4930	61	714	2.975	3.430
February,	5546	185	755	3.146	3.277
March,	7408	140	1490	6.208	7.157
April,	2318	106	402	1.675	1.868
May,	625	88	190	0.792	0.913
June,	470	37	140	0.583	0.651
July,	197	39	80	0.333	0.384
August,	60	21	40	0.167	0.193
September,	2000	23	209	0.871	0.972
October,	1480	52	233	0.971	1.119
November,	850	128	373	1.554	1.733
December,	5378	126	586	2.442	2.815
The year,	7408	21	434	1.810	24.512
1911.					
January,	4380	250	1242	5.175	5.966
February,	3280	406	1016	4.233	4.408
March,	2550	229	725	3.021	3.483
April,	2230	352	958	3.992	4.454
May,	1270	61	242	1.008	1.162
June,	293	48	118	.492	.549
July,	87	21	42	.175	.202
August,	1560	24	164	.683	.787
September,	*7950	25	761	3.171	3.538
October,	*24000	257	1547	6.446	7.432
November,	2880	384	830	3.458	3.858
December,	3610	285	1005	4.188	4.829
The year,	*24000	21	721	3.004	40.668

*Estimated.

MAHONING RIVER.

DESCRIPTION OF BASIN.

The Mahoning river, the largest tributary of the Beaver river, draining an area of approximately 1062 square miles, rises in Columbiana and Stark counties, Ohio, and flows in a northeast direction a considerable distance to north of Warren, Trumbull Co., Ohio, where the river turns and flows southeast, crossing the Pennsylvania-Ohio State Line into Lawrence County, Pa., at a point about 7 miles south of the northwest corner of Lawrence county. From this point the river continues in a general southeasterly direction for a distance of approximately 10½ miles to its confluence with the Shenango river, about 3 miles below New Castle, Pa., to form the Beaver river. The Mahoning river in its last 30 miles has a moderate fall of about 3 feet per mile, and carries a considerable volume of water. The average width of the river in Pennsylvania is 300 feet, the valley being skirted by low hills. the stream flowing between low, cultivated meadows and bottom lands. The watershed is well populated, the largest towns in Ohio being Warren, Girard and Youngstown, while Mahoningtown is the largest town in Pennsylvania. In Ohio there is considerable waterpower developed on this stream, but little or none in Pennsylvania. It is proposed by the Lake Erie and Ohio River Ship Canal to slack water up the river to Niles, Ohio, approximately 28 miles above its mouth.

The mean annual precipitation over this watershed is approximately between 35 and 40 inches.

The discharge of this river was measured at Youngstown, Ohio, from May 23, 1903, to July 23, 1906.

OHIO BASIN—STATION NO. 22.

MAHONING RIVER AT YOUNGSTOWN, OHIO.

DESCRIPTION OF STATION.

This station was established on May 23, 1903, by the United States Geological Survey, and was maintained and operated by that Department until July 23, 1906, when it was discontinued. It was located about 2 miles below Youngstown, Ohio, at the single span, highway bridge, near the plant of the Hazleton Steel Company.

The channel is straight for 2,000 feet above, and 1,000 feet below the station, and is 200 feet wide between abutments. Both banks are high and overflow only during extreme high water. The section is fairly regular and the bed is composed of gravel and small boulders, and is permanent.

Discharge measurements were made from the upstream side of the bridge; the initial point for soundings being the face of the parapet wall of the east abutment, upstream side.

A vertical staff gage was driven in the river bed 15 feet from the east abutment, and was used until Sept. 23, 1903, when a chain gage was installed on the bridge. The length of chain from the bottom of weight to marker was 25.36 ft. The elevation of zero was arbitrary datum. Bench mark No. 1 was the top of the copper plate in the face of the east abutment near the upstream corner; elevation 9.37 feet above gage datum. Bench mark No. 2 was northwest corner of bridge seat of west abutment; elevation 17.12 feet above gage datum. Bench mark No. 3 was a cut in end stone of second tier from top of north wing wall of west abutment; elevation 21.34 feet above gage datum. Bench mark No. 4 was a cut in top handrail at a point 35 feet from east abutment on upstream side; elevation 25.88 feet above gage datum.

During the operation of this station, 22 discharge measurements were made.

The following data have been furnished by the United States Geological Survey.

DISCHARGE MEASUREMENTS OF MAHONING RIVER, AT YOUNGSTOWN, OHIO.

(Drainage area 958 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	sec.-ft.	
	1903.							
1	Mar. 9,	Johnson,	------	------	------	10.80	14,095	
2	July 16,	Pratt	------	------	------	.65	151	
3	Aug. 7,	Murphy,	------	------	------	.90	210	
4	Sept. 23,	Pratt,	------	------	------	.62	149	
5	Oct. 27,	do	------	------	------	.77	167	
6	Nov. 24,	do	------	------	------	1.10	295	
7	Dec. 16,	do	------	------	------	1.00	262	
	1904.							
8	Jan. 27,	Pratt,	162	654	2.16	2.50	1,413	
9	Mar. 8,	do	192	1,624	4.50	7.80	7,322	
10	April 16,	do	152	503	1.38	1.86	694	
11	May 18,	do	144	393	0.56	1.07	219	
12	July 26,	do	150	361	0.45	0.80	164	
13	Aug. 24,	do	155	437	1.04	1.35	455	
14	Sept. 15,	do	135	335	0.21	0.65	66	
15	Nov. 3,	do	153	360	0.30	0.74	108	

DISCHARGE MEASUREMENTS OF MAHONING RIVER, AT YOUNGSTOWN, OHIO.

(Drainage area 958 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
	1905		Feet.	Sq. ft.	Ft. per sec.	Feet.	sec.-ft.	
16	Jan. 18,	Pratt,	75	119	0.96	1.41	422	Ice gorge below.
17	May 23,	Brennan,	156	389	0.71	1.09	276	
18	June 22,	Clapp,	160	602	1.85	2.25	1,116	
19	Oct. 5,	Pratt,	158	482	.96	1.51	465	
20	Nov. 3,	do.	158	443	.75	1.40	332	
	1906							
21	Mar. 7,	Kriegsman,	160	655	2.18	2.67	1,430	
22	May 14,	do.	153	391	0.76	1.19	298	

DISCHARGE TABLE FOR MAHONING RIVER, AT YOUNGSTOWN, OHIO, FROM MAY 23, 1903, TO DEC. 31, 1904.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
.50	8	.60	570	.70	1300	.60	3070	9.00	10120
.60	52	.70	630	.80	1370	.80	3310	.50	11170
.70	98	.80	690	.90	1450	5.00	3550	10.00	12240
.80	146	.90	750	3.00	1530	.50	4200	.50	13400
.90	195	2.00	810	.20	1690	6.00	4870	11.00	14600
1.00	245	.10	880	.40	1850	.50	5620	.50	15800
.10	295	.20	950	.60	2010	7.00	6420	12.00	17000
.20	345	.30	1020	.80	2190	.50	7270	13.00	19400
.30	395	.40	1090	4.00	2390	8.00	8140	14.00	21800
.40	450	.50	1160	.20	2610	.50	9100	15.00	24200
.50	510	.60	1230	.40	2830				

NOTE.—The foregoing table is applicable only for open channel conditions. It is based upon 15 discharge measurements made during 1903 and 1904. It is well defined between gage heights 0.9 foot and 2.0 feet. The table has been extended beyond these limits. The curve is very unsatisfactory below 0.9 foot gage height. This is probably due to the dam below this station; at low stages the water may even fall below the crest of the dam. Above gage height 10.4 feet the rating curve is a tangent, the difference being 240 per tenth.

DISCHARGE TABLE FOR MAHONING RIVER, AT YOUNGSTOWN, OHIO, FOR 1905 AND 1906.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.70	113	.80	719	.90	1575	.20	5130	4.00	2610
.80	151	.90	790	3.00	1660	.40	5390	.20	2810
.90	195	2.00	863	.10	1745	.60	5650	.40	3030
1.00	244	.10	938	.20	1830	.80	5910	.60	3250
.10	296	.20	1014	.30	1920	7.00	6180	.80	3470
.20	350	.30	1091	.40	2010	8.00	7580	5.00	3690
.30	406	.40	1170	.50	2110	9.00	9080	.20	3910
.40	464	.50	1250	.60	2210	10.00	10600	.40	4150
.50	524	.60	1330	.70	2310	11.00	12200	.60	4390
.60	586	.70	1410	.80	2410	12.00	13900	.80	4630
.70	651	.80	1490	.90	2510			6.00	4870

NOTE.—The above table is applicable only for open channel conditions. It is based on 22 discharge measurements made during 1903-1906. It is fairly well defined between gage heights 0.9 foot and 2.5 feet. The table beyond these limits is based on 1 measurement at 7.8 and 1 at 10.8 feet, the latter being recomputed by the use of low water soundings. Below 0.9 foot the curve is very unsatisfactory, probably owing to the influence of the dam below, as at low stages the water may fall below the crest.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MAHONING RIVER AT YOUNGSTOWN, OHIO.

1903.	MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	.70	98	1.20	345	1.80	690	3.15	1650	.45	4	.60	52	.90	195
2,	------	------	.85	170	1.15	320	1.50	510	2.75	1335	.55	30	.65	75	.90	195
3,	------	------	.70	98	1.00	245	1.50	510	2.30	1020	.60	52	.70	98	.85	170
4,	------	------	.70	98	1.00	245	1.40	450	1.85	720	.50	8	.65	75	.75	122
5,	------	------	.70	98	.95	220	.90	195	1.35	422	.55	30	.95	220	.70	98
6,	------	------	.65	75	.80	146	1.00	245	1.20	345	.60	52	.75	122	.75	122
7,	------	------	.75	122	.70	98	.70	98	1.05	270	.45	4	.70	98	.85	170
8,	------	------	1.15	320	.75	122	1.10	295	1.00	245	1.50	510	.50	8	.75	122
9,	------	------	1.35	422	.70	98	.90	195	1.10	295	2.45	1125	.65	75	.75	122
10,	------	------	1.15	320	.70	98	.70	98	1.20	345	2.25	985	.80	146	.90	195
11,	------	------	1.00	245	.70	98	.80	146	1.40	450	1.80	690	.75	122	.95	220
12,	------	------	.80	146	.50	8	.80	146	1.40	450	1.55	540	.70	98	.80	146
13,	------	------	.80	146	.60	52	.70	98	1.30	395	1.55	540	.75	122	.80	146
14,	------	------	1.10	295	.70	98	.70	98	1.10	295	1.35	422	.85	170	.75	122
15,	------	------	1.35	422	.60	52	.70	98	1.10	295	1.10	295	.70	98	.90	195
16,	------	------	1.35	422	.60	52	.70	98	.90	195	1.05	270	.75	122	.90	195
17,	------	------	1.00	245	.60	52	.60	52	.90	195	.85	170	2.35	1055	.80	146
18,	------	------	1.00	245	1.30	395	.60	52	.80	146	.80	146	3.00	2010	.70	98
19,	------	------	.90	195	1.00	245	.60	52	.70	98	.75	122	2.90	1450	.90	195
20,	------	------	.85	170	1.70	630	.50	8	.70	98	.90	195	2.15	915	.90	195
21,	------	------	.60	52	1.90	750	.40	0	.70	98	.85	170	1.50	510	1.40	450
22,	------	------	.65	75	2.00	810	.40	0	.60	52	.85	170	1.10	295	2.05	845
23,	------	------	1.55	540	2.20	950	.30	------	.65	75	.85	170	1.15	320	2.05	845
24,	0.75	122	1.65	600	1.80	690	.30	------	.65	75	.80	146	1.05	270	1.85	720
25,	.80	146	1.55	540	1.40	450	.40	0	.65	75	.80	146	1.00	245	1.60	570
26,	.95	220	1.20	345	1.10	295	.40	0	.35	------	.75	122	1.05	270	1.50	510
27,	.80	146	1.00	245	.90	195	.70	98	.40	0	.75	122	1.00	245	1.40	450
28,	.80	146	.95	220	.70	98	6.70	5940	.50	8	.65	75	.95	220	1.30	395
29,	.70	98	1.00	245	.70	98	8.00	8140	.40	0	.65	75	1.00	245	1.15	32
30,	.70	98	1.10	295	1.00	245	6.30	5320	.40	0	.45	4	.95	220	1.05	27
31,	.60	52	------	------	2.00	810	4.40	2830	------	------	.50	8	------	------	1.00	245

DAILY MEAN GAGE HEIGHTS AND DISCHAGES OF MAHONING RIVER AT YOUNGSTOWN, OHIO.

1904.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.00	------	1.30	------	10.00	12240	13.00	19400	5.40	4070	9.00	10120	.60	52	.96	225	.88	185	.53	21	.71	103	.67	84
2,	1.05	------	1.20	------	10.00	12240	12.60	18410	4.10	2500	11.40	15560	.80	146	.77	132	.65	75	.43	2	.70	98	.66	80
3,	.90	------	1.00	------	9.80	11800	7.00	6420	3.00	1530	10.10	12170	.80	146	.81	151	.62	61	.35	0	.72	108	.64	70
4,	.85	------	1.10	------	9.10	10330	3.10	1610	2.50	1160	4.70	3190	.80	146	.71	103	.60	52	.35	0	.71	103	.68	89
5,	.70	------	1.20	------	8.80	9700	2.50	1160	1.90	750	2.90	1150	1.10	295	.78	136	.58	43	.61	57	.68	89	.68	89
6,	.70	------	1.30	------	5.20	3810	2.20	950	1.60	570	2.20	950	1.30	395	.7	98	.82	156	.65	75	.59	48	.70	98
7,	.70	------	7.20	------	5.70	4460	2.20	950	1.40	450	1.80	690	2.40	1090	.76	127	.75	122	.61	57	.59	48	.78	136
8,	.85	------	10.10	------	7.90	7960	2.10	880	1.30	395	1.50	510	2.60	1230	.72	108	.65	75	.45	4	.67	84	.65	75
9,	.80	------	10.00	------	5.70	4460	2.70	1300	1.30	395	1.40	450	2.20	950	.68	89	.80	146	.34	0	.67	84	.50	8
10,	.70	------	5.50	------	4.00	2390	3.40	1850	1.20	345	1.40	450	1.90	750	.67	84	.68	89	.52	17	.70	98	.60	52
11,	.70	------	3.50	------	2.80	1370	2.70	1300	1.10	295	1.30	395	1.40	450	.78	136	.60	52	.55	30	.75	122	.60	52
12,	.80	------	2.20	------	2.50	1160	2.40	1090	1.10	295	1.20	345	1.40	450	.76	127	.72	108	.66	80	.70	98	.52	17
13,	.80	------	1.90	------	2.00	810	2.20	950	1.00	245	1.10	295	1.30	395	.75	122	.80	146	.62	61	.55	30	.58	43
14,	.90	------	1.50	------	1.90	750	2.10	880	1.00	245	1.00	245	1.20	345	.78	136	.82	156	.59	48	.80	146	.72	108
15,	.80	------	1.30	------	1.70	630	1.90	750	1.10	295	1.00	245	1.20	345	.77	132	.66	80	.55	30	.71	103	.70	98
16,	.70	------	1.30	------	1.60	570	1.80	690	1.00	245	.90	195	1.20	345	.75	122	.61	57	.55	30	.70	98	.71	103
17,	.90	------	1.00	------	1.50	510	1.70	630	1.10	295	.90	195	1.10	295	.71	103	.62	61	.65	75	.70	98	.60	52
18,	.80	------	.90	------	2.70	1300	1.70	630	1.20	345	.70	98	1.00	245	.69	93	.44	3	.61	57	.75	122	.40	0
19,	.90	------	.90	------	4.40	2830	1.60	570	3.10	1610	.70	98	.80	146	.70	98	.65	75	.70	98	.50	8	.48	6
20,	1.2	------	.80	------	4.70	3190	1.50	510	4.50	2950	.90	195	.80	146	.98	235	.68	89	.50	8	.71	103	.50	8
21,	4.3	------	1.00	------	4.40	2830	1.40	450	3.30	1770	1.10	295	.80	146	.94	215	.62	61	.58	43	.73	112	.45	4
22,	14.15	------	1.60	------	3.40	1850	1.30	395	2.20	950	1.40	450	.70	98	1.00	245	.52	17	.80	146	.71	103	.50	8
23,	17.45	------	1.80	------	5.40	4070	1.20	345	1.90	750	1.40	450	.70	98	1.40	450	.50	8	.51	12	.55	30	.63	66
24,	15.0	------	2.40	------	4.90	3430	1.20	345	4.50	2950	1.30	395	.60	52	1.25	370	.53	21	.55	30	.64	70	.70	98
25,	9.7	------	1.90	------	3.50	1930	1.50	510	4.70	3190	1.10	295	.60	52	1.17	330	.46	5	.55	30	.62	61	1.00	245
26,	4.5	------	1.50	------	9.20	10540	2.50	1100	5.50	4200	.80	146	.70	98	2.05	845	.72	108	.57	39	.50	8	1.40	450
27,	3.6	------	1.90	------	10.20	12700	3.70	2100	10.10	12470	.80	146	.85	171	2.25	985	.50	8	.56	36	.50	8	2.48	1146
28,	2.5	------	.90	------	8.30	8710	3.90	2290	8.70	9500	.70	98	.87	180	1.52	522	.58	43	.72	108	.62	61	3.20	1690
29,	2.3	------	1.00	------	5.40	4070	4.80	3310	4.40	2830	.70	98	.90	195	1.15	320	.45	4	.81	151	.64	70	1.81	696
30,	2.0	------	------	------	3.50	1930	7.10	6590	2.80	1370	.60	52	.69	93	1.02	255	.41	1	.60	52	.65	75	1.80	690
31,	1.5	------	------	------	3.50	1930	------	------	3.30	1770	------	------	.61	57	.93	210	------	------	.64	70	------	------	1.82	702

Ice conditions, with gorge, January and February.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MAHONING RIVER AT YOUNGSTOWN, OHIO.

1905.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.80	719	.75	132	2.40	1170	1.40	464	1.15	323	1.15	323	1.00	244	1.60	586	1.15	323	.85	173	1.25	378	4.30	2920
2,	1.50	524	.72	121	1.95	826	1.45	494	1.15	323	.95	220	1.15	323	1.15	323	1.05	270	.90	195	1.30	406	3.90	2510
3,	1.15	323	.70	113	1.75	685	1.30	406	.95	220	.98	234	1.95	826	.95	220	.90	195	1.10	296	1.35	435	4.00	2610
4,	1.10	296	.65	96	1.70	651	1.22	361	.95	220			1.50	524	.75	132	.80	151	1.20	350	1.30	406	5.00	3690
5,	1.15	323	.60	80	1.70	651	1.20	350	1.00	244			1.60	586	.60	80	1.00	244	1.30	406	1.20	350	3.55	2160
6,	1.17	334	.72	121	2.15	976	1.15	323	.95	220			1.55	555	.75	132	.92	205	1.25	378	1.50	524	2.60	1330
7,	1.10	296	.70	113	2.80	1490	1.10	296	1.00	244			1.40	464	.85	173	1.10	296	1.10	296	2.50	1250	2.25	1052
8,	.90	195	.75	132	7.00	6180	1.08	286	.95	220			1.20	350	.90	195	.90	195	.95	220	2.40	1170	2.20	1014
9,	.90	195	.80	151	7.00	6180	1.15	323	.92	205			1.00	244	1.00	244	.85	173	.85	173	2.05	900	2.15	976
10,	.86	177	.78	143	7.00	6180	1.10	296	.85	173			.95	220	1.25	378	.70	113	.75	132	1.85	754	2.10	938
11,	.90	195	.68	106	6.20	5130	1.50	524	.92	205			1.00	244	1.15	323	1.95	826	1.05	270	1.75	685	1.75	685
12,	1.12	307	.72	121	3.90	2510	1.58	574	4.60	3250			1.40	464	1.00	244	3.80	2410	1.00	244	1.60	586	1.65	618
13,	2.10	938	.85	173	3.00	1660	1.60	586	5.50	4270	2.3	1091	6.40	5390	3.90	2510	3.20	1830	1.55	555	1.55	555	1.55	555
14,	2.80	1490	.90	195	2.50	1250	1.60	586	2.90	1575	2.0	863	8.40	8180	3.60	2210	1.95	826	1.40	464	1.45	494	1.50	524
15,	2.42	1186	1.00	244	2.10	938	1.30	406	2.50	1250	1.65	618	6.40	5390	3.80	2410	1.55	555	1.30	406	1.40	464	1.15	323
16,	1.80	719	.92	205	1.90	790	1.25	378	2.50	1250	1.40	464	2.50	1250	2.70	1410	1.65	618	1.25	378	1.45	494	1.20	350
17,	1.50	524	.97	229	2.40	1170	1.30	406	2.15	976	4.90	3580	1.75	685	2.70	1410	1.50	524	1.25	378	1.50	524	1.20	350
18,	1.40	464	.84	169	4.00	2610	1.50	524	2.30	1091	4.80	3470	1.55	555	2.60	1330	2.40	1170	1.25	378	1.70	651	1.10	296
19,	1.20	350	.72	121	9.60	9980	1.95	826	2.00	863	4.60	3250	1.30	406	2.50	1250	2.60	1330	2.70	685	1.75	685	1.15	323
20,	1.14	318	.76	136	11.50	13050	2.20	1014	1.85	754	2.25	1052	5.20	3910	2.00	863	3.70	2310	3.05	1410	1.50	524	1.15	323
21,	1.10	296	.85	173	11.50	13050	5.40	4150	1.40	464	2.00	863	6.20	5130		938	4.80	3470	2.75	1702	1.35	435	3.45	2060
22,	1.20	350	1.05	270	9.00	9080	4.20	2810	1.30	406	4.90	3580	2.60	1330		1014	3.30	1920	2.05	1450	1.25	378	6.50	5520
23,	1.30	406	1.10	296	6.40	5390	3.20	1830	1.15	323	6.60	5650	1.85	754	2.30	1091	2.15	976	1.90	900	1.15	323	6.00	4870
24,	1.20	350	1.35	435	4.00	2610	2.40	1170	1.00	244	3.90	2510	1.85	754	2.70	1410	1.25	378	1.75	790	1.10	296	3.90	2510
25,	1.10	296	1.60	586	3.60	2210	1.95	826	.85	173	3.00	1660	1.35	435	3.60	2210	1.45	494	1.60	685	1.10	296	2.80	1490
26,	1.02	254	2.40	1170	3.10	1745	1.50	524	.50	51	2.60	1330	1.00	244	5.50	4270	1.20	350	1.40	586	1.15	323	2.25	1052
27,	.90	195	2.50	1250	2.50	1250	1.45	494	3.00	1660	1.25	378	.95	220	3.30	1920	.95	220	1.35	464	1.30	406	2.05	900
28,	.80	151	2.90	1575	2.20	1014	1.50	524	2.70	1410	1.10	296	.75	132	1.90	790	.90	195	1.15	435	1.65	618	2.25	1052
29,	.76	136			1.95	826	1.35	435	1.70	651	1.00	244	.80	151	1.45	494	.60	80	1.05	323	5.35	4090	1.75	685
30,	.80	151			1.95	826	1.35	435	1.50	524	.90	195	2.25	1052	1.25	378	.75	132	1.10	270	6.30	5260	2.00	863
31,	.76	136			1.5	524			1.30	406			2.00	863	1.18	339				296			1.95	826

Practically no ice conditions, owing to hot water from steel plant.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF MAHONING RIVER AT YOUNGSTOWN, OHIO.

1906. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.70	651	1.35	435	1.80	719	5.55	4330	1.00	244	0.80	151	0.85	173
2,	1.55	555	1.15	323	4.80	3470	3.75	2360	.95	220	.80	151	.80	151
3,	1.70	651	1.20	350	4.20	2810	2.65	1370	.90	195	.75	132	.75	132
4,	4.35	2980	1.10	296	4.50	3140	2.20	1010	.95	220	.85	173	.70	113
5,	5.55	4330	1.05	270	4.80	3470	1.85	755	3.75	2360	.70	113	.85	173
6,	3.40	2010	1.00	244	4.20	2810	2.20	1010	3.95	2560	.70	113	.80	151
7,	2.05	900	.95	220	3.50	2110	2.10	938	3.70	2310	.75	132	.75	132
8,	1.90	790	1.00	244	2.40	1170	2.25	1050	3.20	1830	.70	113	.75	132
9,	1.60	586	.90	195	2.35	1130	2.40	1170	2.05	900	1.00	244	.70	113
10,	1.45	494	.80	151	2.00	863	3.15	1790	1.90	790	.90	195	.80	151
11,	1.25	378	.75	132	1.85	755	4.35	2980	1.65	618	.95	220	.90	195
12,	1.25	378	.70	113	1.35	435	3.35	1960	1.45	494	.90	195	1.10	296
13,	1.15	323	.80	151	1.75	685	2.85	1530	1.40	464	.90	195	1.20	350
14,	1.05	270	.85	173	1.70	651	2.35	1130	1.15	323	.85	173	1.40	464
15,	1.10	296	1.20	350	1.70	651	2.20	1010	1.20	350	1.00	244	1.45	494
16,	1.70	651	1.40	464	1.60	586	2.15	976	1.10	296	.95	220	1.25	378
17,	2.05	900	1.35	435	1.45	494	2.05	900	1.10	296	.80	151	1.15	323
18,	2.40	1170	1.30	406	1.40	464	1.90	790	1.05	270	.75	132	1.05	270
19,	2.95	1620	1.20	350	1.55	555	1.80	719	1.00	244	.80	151	1.00	244
20,	3.15	1790	1.15	323	1.35	435	1.70	651	1.05	270	.95	220	.95	220
21,	3.65	2260	1.50	524	1.30	406	1.65	618	1.00	244	.85	173	.95	220
22,	3.40	2010	2.10	938	1.45	494	1.50	524	.95	220	.85	173	.90	195
23,	3.15	1790	2.50	1250	1.35	435	1.30	406	.95	220	.80	151	0.85	173
24,	3.80	2410	2.45	1210	1.50	524	1.30	406	.90	195	.80	151	------	------
25,	2.50	1250	2.65	1370	1.65	618	1.25	378	.85	173	.75	132	------	------
26,	2.00	863	2.00	863	1.70	651	1.20	350	.80	151	.75	132	------	------
27,	1.70	651	1.75	685	9.20	9380	1.20	350	.70	113	.80	151	------	------
28,	1.55	555	1.45	494	11.55	13100	1.15	323	.70	113	.85	173	------	------
29,	1.45	494	------	------	11.40	12900	1.20	350	.75	132	.90	195	------	------
30,	1.30	406	------	------	8.30	8030	1.10	296	.80	151	.85	173	------	------
31,	1.25	378	------	------	6.45	5500	------	------	.75	132	------	------	------	------

No ice conditions at this station. Station discontinued July 23, 1906.

ESTIMATED MONTHLY DISCHARGE OF MAHONING RIVER, AT YOUNGSTOWN OHIO.

(Drainage area 958 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1903.					
June,	600	52	250	.261	.291
July,	950	8	291	.304	.350
August,	8140	0	854	.891	1.03
September,	1650	0	322	.336	.375
October,	1125	4	239	.250	.288
November,	2010	8	332	.347	.387
December,	845	98	284	.296	.341
*1904					
March,	12700	510	4726	4.93	5.68
April,	19400	345	2615	2.73	3.05
May,	12470	245	1959	2.04	2.35
June,	15560	52	1686	1.76	1.96
July,	1230	52	310	.324	.374
August,	985	84	236	.246	.284
September,	185	1	70	.073	.081
October,	151	0	47	.049	.056
November,	146	8	80	.083	.093
December,	1690	0	228	.238	.274
1905.					
January,	1490	136	406	.424	.489
February,	1575	80	310	.324	.337
March,	13050	524	3310	3.46	3.99
April,	4150	286	754	.787	.878
May,	4270	51	780	.814	.938
June,	5650	195	1518	1.58	1.23
July,	8180	132	1351	1.41	1.63
†August,	4270	80	1009	1.05	1.21
September,	3470	80	759	.792	.884
October,	1702	132	506	.528	.609
November,	5260	296	822	.858	.957
December,	5520	296	1464	1.53	1.76
‡1906.					
January,	4330	270	1120	1.17	1.35
February,	1370	113	463	.483	.50
March,	13100	406	2560	2.67	3.08
April,	4330	296	1080	1.13	1.26
May,	2560	113	552	.576	.66
June,	244	113	167	.174	.19
July, 1-23,	494	113	228	.238	.20

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†Discharge interpolated for missing gage heights

*Ice conditions, with gorge, January and February.

‡Values are rated as follows: January to May, good; June to July, fair.

CHEAT RIVER.

DESCRIPTION OF BASIN.

The Cheat river, or its uppermost branch, the Shavers Fork, rises in the northern part of Pocahontas county, W. Va., and flows in a general northwesterly direction to its mouth in the Monongahela river, at Point Marion, Fayette Co., Pa., about 90 miles below Pittsburgh, Pa., a distance of approximately 157 miles, 4 miles of which is in Pennsylvania. It drains an area of approximately 1427 square miles, of which 98 lies in Pennsylvania. The source is in the point of coalescence of Back Allegheny Mountain and Cheat Mountain, at elevation of approximately 4500 feet, from which it falls to elevation 780 feet at its mouth, the total fall being 3720 feet, or at the rate of 23.6 feet per mile. The river proper, which is formed by the junction of Shavers Fork and Dry Fork, at Parsons, W. Va., is at elevation 1625 feet, and has a fall of approximately 11 feet per mile to its mouth, a distance of about 78 miles. The drainage basin of Shavers Fork is very long and narrow, while that of Dry Fork is notably fan-shaped. The headwaters of this river lie in a rough, mountainous region, many of the valleys being in deep gorges, with swiftly flowing mountain streams. The Cheat river, from the source of Shavers Fork for half its length, lies in a narrow, steep-sided and uncultivated gorge, with the mountain slopes heavily timbered. Above Parsons, W. Va., for a distance of a few miles, the valley opens out with the stream flowing through low bottom land or flood plains. Below this point for a distance of 9 miles it passes through a steep-sided, broad valley, with cultivated and unusually level bottoms, the course of the stream being very tortuous. From this point to Mont Chateau, W. Va., there are numerous small patches of cultivated bottom land, while below this point the river then enters Pennsylvania through another gorge, which extends to its mouth.

Owing to the fact that the basin of this stream is long and narrow, being 100 miles in length by about 14 miles in width, together with other topographical features, conducive to the same result, the Cheat river has a rapidly fluctuating discharge, rising quickly in great floods, and reducing rapidly thereafter.

Approximately three-quarters of the entire drainage area is reported to be forest covered and coal is mined over a large portion of this watershed. There are very few towns of importance in this drainage basin, the largest being Rowlesburg and Parsons, W. Va., and Point Marion, Pa., which latter community uses this stream as a source of domestic water supply.

The mean annual precipitation over this watershed is from approximately 40 to 45 inches.

The discharge has been measured since July, 1899, at Ice's Ferry, near Morgantown, W. Va.

OHIO BASIN—STATION NO. 23.

CHEAT RIVER NEAR MORGANTOWN, W. VA.

DESCRIPTION OF STATION.

This station, which was maintained from July 8th to December 30th, 1899, July 1st to December 29th, 1900, and August 21st, 1902, to December 31st, 1905, by the United States Geological Survey, was re-established November 18th, 1908, by F. W. Scheidenhelm, of the Pittsburg Hydro-Electric Company, who has maintained and operated this station since this latter date.

The staff gage for this station was originally located about 100 feet above the present location of Ice's Ferry bridge at Uneva, W. Va., about six miles northeast of Morgantown and ten miles above the mouth of Cheat river. The 1899 measurement was made from a cable which was located at the gage. During 1900 the cable was moved downstream about a mile and all subsequent measurements were made at the new cable location, except those stated to have been made at wading sections or at Ice's Ferry bridge. The first four measurements made during 1899 to 1901 were referred to the staff gage, immediately above the present location of Ice's Ferry bridge.

On August 20th, 1902, a new inclined and vertical staff gage was installed about 275 feet below the new cable section. The readings were made on the inclined section below 6.5 feet. The new gage was set to read the same as the original gage at 1.8 feet. On September 28th, 1904, the inclined portion of this staff gage was found to read 0.35 foot to high and the vertical section 0.15 foot to high. Both sections were accordingly lowered. On September 28th, 1904, a chain gage was established on Ice's Ferry bridge to read the same as the second staff gage at 1.85 feet. The chain measures 41.03 feet from bottom of weight to marker. Both gages were maintained from September 28th, 1904, to December 31st, 1905. The staff gage was maintained from November 18th, 1908, to May 8th, 1909, and the chain gage has been maintained from January 21st, 1909, to date. From these simultaneous gage readings the following gage relation has been determined.

Chain gage. Feet.	Staff gage. Feet.	Chain gage. Feet.	Staff gage. Feet.
1.5	1.52	6.5	7.69
2.0	2.00	7.0	8.28
2.5	2.52	7.5	8.87
3.0	3.11	8.0	9.43
3.5	3.78	8.5	9.98
4.0	4.46	9.0	10.53
4.5	5.15	9.5	11.06
5.0	5.82	10.0	11.59
5.5	6.47	10.5	12.11
6.0	7.09	11.0	12.65

All discharge measurements and gage heights from 1902 to 1909, as published below, are referred to the second staff gage. All gage heights from 1902 to September 28th, 1904, have been reduced to the gage zero established September 28th, 1904. Gage heights for 1899-1900 are referred to the original staff gage.

The following are the bench marks to which the chain gage is referred: The top of northeast anchor bolt in north end of masonry footing of east pier has an elevation of 9.33 feet above the zero of the gage. The chiselled rod seat, two feet above the ground, in cornerstone of northwest corner of east abutment, has an elevation of 16.67 feet above the zero of the gage. This seat is on the west face of the abutment, eight inches from the north edge of face.

The original staff gage and the chain gage are located in a deep pool, with large islands about one-fourth mile above and below the station. The second staff gage is also located in a deep pool of somewhat smaller dimensions than at the original location. It is situated nearly one-fourth mile below a large island and a short distance above a small island. Both pools are controlled by permanent rock reefs. Water was diverted around the lower gage for milling prior to 1908. The quantity thus diverted was comparatively small, (see table of discharge measurements,) except at low stages and has been disregarded in the following computations of discharge but should, however, be taken into consideration in making use of the tables to determine the run-off in the Cheat river drainage basin No tributaries of any importance enter the Cheat river near the gaging station.

DISCHARGE MEASUREMENTS OF CHEAT RIVER, NEAR MORGANTOWN, W. VA.

(Drainage area 1,380 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks,
			Feet.	Sq. ft.	Ft. per sec.	Feet.	sec.-ft.	
1	1899. July 8,	E. G. Paul,	367	2,160	......	2.60	1,150	Msmt. made at original cable section above the present Ice's ferry bridge.
2	1900. June 25,	E. G. Paul,	292	1,240	......	2.80	1,400	Msmt. made at second cable section about 1 mile below the bridge. Mill-race discharge of 25 sec.-ft. included in total discharge of the river.
3	1901. July 26,	E. G. Paul,	282	1.060	......	2.30	710	Msmt. at 2nd cable section about 1 mile below bridge. Somewhat affected by new Ice's ferry bridge, which was erected below the original gage during 1900-1901. Mill-race discharge of 6 sec. ft. included in total discharge of the river.
4	Nov. 5,	E. G. Paul,	139	167	......	1.45	222	Msmt. made at wading station, 700 ft. above the 2nd cable location. Somewhat affected by new Ice's ferry bridge.
5	1902. Aug. 20,	E. G. Paul,	275	940	......	2.10	299	Msmt. made at 2nd cable section about 1 mile below bridge.
6	1903. Sept. 1,	E. G. Paul,	283	1,090	......	2.65	672	Msmt. made at 2nd cable section about 1 mile below bridge. Mill-race discharge of 10 sec. ft. not included in value of discharge given.
7	1904. July 6,	Hoyt & Hall,	300	1,230	......	2.95	773	Msmt. made at 2nd cable section about 1 mile below bridge.
8	Sept. 16,	R. J. Taylor,	275	887	......	2.00	136	Msmt. at 2nd cable section considered inaccurate on account of low velocity, and not used in developing the discharge curve.
9	1905. Mar 17,	Grover & Morse,	388	2,750	......	5.56	5,720	Msmt. made at Ice's ferry bridge. Gage height was read on the chain gage and reduced to the corresponding reading on the staff gage.
10	Mar. 17,	Grover & Morse,	320	1,950	......	5.62	5,940	Msmt. made at 2nd cable section about 1 mile below bridge.

DISCHARGE MEASUREMENTS OF CHEAT RIVER, NEAR MORGANTOWN, W. VA.—(Continued).

(Drainage area 1,380 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean Velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1908.							
11	Nov. 18,	Scheidenhelm & Custer,	83	74	------	1.61	131	Msmt. at wading section, 3-8 mile above bridge.
12	Dec. 9,	L. B. Custer, --------	171	141	------	1.86	223	Msmt. at wading section 1-4 mile below the cable.
	1909.							
13	Jan. 21,	Horton & Scheidenhelm,	385	2,450	------	4.16	2,410	Msmt. at Ice's ferry bridge.
14	April 28,	Scheidenhelm & Hammel, -----------------	395	2,900	------	5.16	4,520	Msmt. at Ice's ferry bridge. Gage height read on chain gage and reduced to corresponding reading on staff gage.
15	June 6,	Scheidenhelm & Hammel,	412	3,380	------	7.26	10,600	Msmt. at Ice's ferry bridge. Gage height read on chain gage and reduced to corresponding reading on staff gage.
16	June 7,	V. F. Hammel, ------	397	2,880	------	5.62	6,140	Msmt. at Ice's ferry bridge. Gage height read on chain gage and reduced to corresponding reading on staff gage.
17	July 12,	V. F. Hammel, ------	106	132	------	2.34	358	Msmt. at wading section, 1-2 mile above bridge. Gage height read on chain gage and reduced to corresponding reading on staff gage.
18	Aug. 19,	Scheidenhelm & Hammel,	386	2,460	------	4.06	2,180	Msmt. at Ice's ferry bridge. Gage height read on chain gage and reduced to corresponding reading on staff gage.
19	Aug. 19,	Scheidenheim & Hammel,	385	2,390	------	3.99	1,950	Msmt. at Ice's ferry bridge. Gage height read on chain gage and reduced to corresponding reading on staff gage.
	1911.							
20	Oct. 7,	H. P. Drake, -----------	395	3,000	2.07	4.79	6,220	

DISCHARGE TABLE FOR CHEAT RIVER, NEAR MORGANTOWN, W. VA. (REFERRED TO FIRST STAFF GAGE,) FOR 1899 AND 1900.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.30	165	.30	750	.30	2380	.30	5540	.40	9770
.40	200	.40	855	.40	2630	.40	5900	.60	10570
.50	240	.50	970	.50	2900	.50	6270	.80	11380
.60	280	.60	1100	.60	3190	.60	6640	6.00	12200
.70	325	.70	1240	.70	3500	.70	7020	.20	13020
.80	375	.80	1400	.80	3820	.80	7400	.40	13840
.90	430	.90	1570	.90	4150	.90	7790	.60	14670
2.00	495	3.00	1750	4.00	4490	5.00	8180	.80	15510
.10	570	.10	1940	.10	4830	.20	8970	7.00	16350
.20	655	.20	2150	.20	5180				

Note:—The above table is not applicable for ice or obstructed-channel conditions. It is based on four discharge measurements made 1899-1901 and is fairly well defined. Above gage height 3.0 feet the rating curve is based on the form of the rating referred to the chain gage at Ice's ferry bridge and should be accurate. This table applies to original gage located about 100 feet above the present Ice's ferry bridge.

DISCHARGE TABLE FOR CHEAT RIVER, NEAR MORGANTOWN, W. VA. (REFERRED TO SECOND STAFF GAGE) FROM 1902 TO 1909.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.50	110	.70	590	.80	1760	.90	4000	7.00	10080
.60	135	.80	660	.90	1920	5.00	4250	.20	10720
.70	160	.90	735	4.00	2090	.20	4760	.40	11370
.80	190	3.00	815	.10	2280	.40	5300	.60	12030
.90	220	.10	905	.20	2470	.60	5860	.80	12690
2.00	255	.20	1005	.30	2670	.80	6430	8.00	13370
.10	290	.30	1110	.40	2880	6.00	7010	9.00	16830
.20	330	.40	1220	.50	3090	.20	7610	10.00	20480
.30	375	.50	1340	.60	3310	.40	8210	11.00	24180
.40	420	.60	1470	.70	3530	.60	8830	12.00	27980
.50	470	.70	1610	.80	3760	.80	9450	13.00	31880
.60	525								

Note:—The above table is not applicable for ice or obstructed-channel conditions. It is based on thirteen discharge measurements made during 1902 t_o 1909 and is well defined between gage heights 1.6 feet and 8.0 feet.

DISCHARGE TABLE FOR CHEAT RIVER, NEAR MORGANTOWN, W. VA. (FOR CHAIN GAGE) FOR 1910 AND 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	**Feet.**	Sec.-ft.
1.50	115	.50	1730	.50	8400	.40	15900	.30	23585
.60	140	.60	1955	.60	8790	.50	16300	.40	23990
.70	165	.70	2200	.70	9180	.60	16700	.50	24395
.80	190	.80	2450	.80	9570	.70	17105	.60	24800
.90	220	.90	2710	.90	9960	.80	17510	.70	25205
2.00	255	4.00	3000	6.00	10350	.90	17915	.80	25610
.10	290	.10	3300	.10	10740	8.00	18320	.90	26015
.20	330	.20	3620	.20	11130	.10	18725	10.00	26420
.30	375	.30	3950	.30	11520	.20	19130	.10	26825
.40	425	.40	4290	.40	11910	.30	19535	.20	27230
.50	480	.50	4640	.50	12300	.40	19940	.30	27635
.60	545	.60	5000	.60	12700	.50	20345	.40	28040
.70	625	.70	5370	.70	13100	.60	20750	.50	28450
.80	710	.80	5740	.80	13500	.70	21155	.60	28860
.90	805	.90	6110	.90	13900	.80	21560	.70	29270
3.00	915	5.00	6490	7.00	14300	.90	21965	.80	29680
.10	1045	.10	6870	.10	14700	9.00	22370	.90	30090
.20	1185	.20	7250	.20	15100	.10	22775	11.00	30500
.30	1340	.30	7630	.30	15500	.20	23180	12.00	34600
.40	1520	.40	8010						

Note:—This table was computed from 1902-1909 table for staff gage by use of table of relation between staff gage and chain gage, and then "smoothed out;" it is well defined between gage heights 1.5 and 6.5 feet.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEAT RIVER, NEAR MORGANTOWN, W. VA.

1899. Day.	JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	3.0	1750	2.2	655	2.0	495	3.7	3500	2.9	1570
2,	------	------	2.8	1400	2.0	495	2.0	495	4.0	4490	2.8	1400
3,	------	------	2.7	1240	2.3	750	1.9	430	3.8	3820	2.7	1240
4,	------	------	2.5	970	2.2	655	1.9	430	3.5	2900	2.7	1240
5,	------	------	3.4	2630	2.2	655	1.9	430	3.3	2380	2.6	1100
6,	------	------	3.3	2380	2.2	655	1.9	430	3.1	1940	2.6	1100
7,	------	------	3.0	1750	2.1	570	1.8	375	2.1	570	2.5	970
8,	2.6	1100	2.8	1400	2.0	495	1.8	375	2.1	570	2.5	970
9,	3.0	1750	2.7	1240	2.0	495	1.8	375	2.8	1400	2.5	970
10,	2.8	1400	2.6	1100	2.2	655	1.7	325	2.7	1240	2.5	970
11,	2.7	1240	2.5	970	4.1	4830	1.7	325	2.6	1100	2.7	1240
12,	2.5	970	2.4	855	3.8	3820	1.7	325	2.9	1570	5.5	10200
13,	2.4	855	2.3	750	3.5	2900	1.7	325	2.7	1240	6.4	13800
14,	2.5	970	2.2	655	3.2	2150	1.7	325	2.6	1100	4.8	7400
15,	2.8	1400	2.2	655	3.0	1750	1.7	325	2.6	1100	4.2	5180
16,	2.8	1400	2.3	750	2.8	1400	1.7	325	2.5	970	3.8	3820
17,	3.5	2900	2.4	855	2.7	1240	1.8	375	2.4	855	3.4	2630
18,	3.4	2630	2.3	750	2.3	750	1.8	375	2.4	855	3.2	2150
19,	3.0	1750	2.2	655	2.2	655	1.7	325	2.5	970	3.0	1750
20,	2.8	1400	2.1	570	2.0	495	1.7	325	3.4	2630	4.8	7400
21,	2.4	855	2.0	495	1.9	430	1.6	280	3.4	2630	4.4	5900
22,	2.4	855	2.0	495	1.9	430	1.6	280	3.2	2150	4.1	4830
23,	2.4	855	1.9	430	2.3	750	1.6	280	3.0	1750	3.9	4150
24,	2.3	750	1.9	430	2.2	655	1.6	280	3.0	1750	5.2	8970
25,	2.5	970	1.8	375	2.2	655	1.6	280	3.9	4150	4.4	5900
26,	2.7	1240	1.8	375	2.1	570	1.7	325	3.7	3500	3.6	3190
27,	2.8	1400	1.8	375	2.3	750	1.7	325	3.5	2900	3.2	2150
28,	2.6	1100	2.5	970	2.4	855	1.7	325	3.3	2380	2.9	1570
29,	2.5	970	2.4	855	2.3	750	1.7	325	3.1	1940	2.7	1240
30,	3.5	2900	2.3	750	2.2	655	1.7	325	3.1	1940	2.6	1100
31,	3.6	3190	2.3	750	------	------	1.7	325	------	------	------	970

Note:—The temperature was low December 25 to 31, 1899, but the discharge was probably not materially affected by ice conditions.

Discharge estimated December 31, 1899.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEAT RIVER, NEAR MORGANTOWN, W. VA.

1900. Day.	JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.2	2150	3.2	2150	2.3	750	2.1	570	1.6	280	------	6270
2,	2.8	1400	3.1	1940	2.1	570	2.0	495	1.6	280	4.0	4490
3,	2.7	1240	2.9	1570	2.0	495	1.9	430	1.7	325	4.0	4490
4,	2.6	1100	2.7	1240	1.9	430	1.8	375	1.7	325	4.3	5540
5,	2.6	1100	2.6	1100	1.6	280	1.7	325	1.6	280	7.0	16400
6,	2.4	855	2.4	855	1.5	240	1.6	280	2.0	495	7.0	16400
7,	2.3	750	2.4	855	1.4	200	1.5	240	2.3	750	6.0	12200
8,	3.0	1750	2.3	750	1.4	200	1.6	280	2.5	970	5.0	8180
9,	2.9	1570	2.0	495	1.4	200	1.7	325	2.4	855	4.4	5900
10,	2.9	1570	2.0	495	1.4	200	1.7	325	2.2	655	4.7	7020
11,	2.8	1400	2.0	495	1.4	200	1.7	325	2.0	495	3.4	2630
12,	2.7	1240	1.8	375	1.4	200	1.7	325	1.9	430	3.4	2630
13,	2.6	1100	1.7	325	1.3	165	1.6	280	1.9	430	3.2	2150
14,	2.5	970	1.7	325	1.3	165	1.5	240	1.9	430	3.0	1750
15,	2.6	1100	1.7	325	1.3	165	1.5	240	2.0	495	3.0	1750
16,	2.6	1100	1.6	280	1.4	200	1.4	200	2.2	655	3.0	1750
17,	2.8	1400	1.6	280	1.4	200	1.4	200	2.2	655	2.9	1570
18,	2.9	1570	1.5	240	1.4	200	1.4	200	2.1	570	2.8	1400
19,	2.9	1570	1.5	240	1.4	200	1.5	240	2.2	655	2.8	1400
20,	3.0	1750	1.6	280	1.4	200	1.4	200	3.0	1750	2.7	1240
21,	3.0	1750	2.0	495	1.3	165	1.3	165	3.3	2380	2.7	1240
22,	3.0	1750	1.9	430	1.5	240	1.3	165	3.5	2900	2.6	1100
23,	2.9	1570	1.8	375	1.5	240	1.3	165	3.8	3820	3.0	1750
24,	3.5	2900	1.8	375	1.4	200	2.3	750	4.0	4490	3.2	2150
25,	4.8	7400	1.8	375	1.4	200	2.3	750	------	8180	3.3	2380
26,	5.1	8570	1.8	275	1.5	240	2.2	655	------	14000	3.3	2380
27,	5.2	8970	1.7	325	1.3	165	2.1	570	------	20000	3.2	2150
28,	4.9	7790	1.7	325	1.3	165	2.0	495	------	13800	3.1	1940
29,	3.7	3500	2.0	495	1.4	200	1.8	375	------	9770	3.1	1940
30,	3.4	2630	2.3	750	1.4	200	1.7	325	------	8180	------	2900
31,	3.2	2150	2.3	750	------	------	1.6	280	------	------	------	2900

Note:—The discharge was probably unaffected by ice conditions during December, 1900. Discharges November 25 to December 1 and December 30 and 31, 1900, estimated by a hydrograph comparison with Youghiogheny river at Friendsville, Md.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEAT RIVER, NEAR MORGANTOWN, W. VA.

1902. Day.	AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	2.05	272	3.15	955	2.85	698	5.0	4250
2,	------	------	2.05	272	5.15	4630	2.55	498	4.85	3880
3,	------	------	2.05	272	4.0	2090	2.55	498	6.4	8210
4,	------	------	2.15	310	3.75	1680	2.55	498	6.65	8980
5,	------	------	2.0	255	3.75	1680	2.4	420	5.7	6140
6,	------	------	2.65	558	3.8	1760	2.25	352	4.95	4120
7,	------	------	2.35	398	3.4	1220	2.5	470	4.5	3090
8,	------	------	2.2	330	3.2	1000	2.55	498	4.45	2980
9,	------	------	2.05	272	2.95	775	2.75	625	4.3	2670
10,	------	------	2.05	272	2.7	590	2.6	525	3.9	1920
11,	2.15	310	2.05	272	2.55	498	2.55	498	5.95	6860
12,	2.25	352	1.95	238	5.8	6430	2.55	498	11.05	24400
13,	2.95	775	1.95	238	5.3	5030	2.55	498	10.65	22800
14,	3.05	860	1.85	205	4.75	3640	2.6	525	9.1	17200
15,	2.65	558	1.85	205	4.1	2280	2.55	498	6.85	9600
16,	------	------	1.8	190	3.65	1540	2.55	498	10.6	22700
17,	------	------	1.75	175	3.35	1160	2.55	498	9.35	18100
18,	------	------	1.75	175	3.15	955	2.55	498	7.65	12200
19,	------	------	1.85	205	3.0	815	2.35	398	6.0	7010
20,	------	------	1.75	175	2.8	660	2.35	398	4.3	2670
21,	------	------	1.75	175	2.8	660	2.5	470	4.75	3640
22,	------	------	1.65	148	2.7	590	2.75	625	5.55	5720
23,	------	------	1.65	148	2.55	498	2.7	590	5.85	6580
24,	------	------	1.65	148	2.55	498	3.1	905	5.15	4630
25,	------	------	1.65	148	2.55	498	4.7	3530	4.65	3420
26,	2.4	420	1.8	190	2.45	445	8.15	13900	4.3	2670
27,	2.25	352	2.05	272	2.55	498	6.95	9920	3.8	1760
28,	2.15	310	1.95	238	3.1	905	5.7	6140	3.55	1400
29,	2.05	272	2.35	398	2.95	775	4.9	4000	3.7	1610
30,	2.05	272	2.4	420	2.95	775	4.4	2880	5.1	4500
31,	2.05	272	------	------	2.85	698	------	------	4.9	4000

Note:—Discharge unaffected by ice conditions December, 1902.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEAT RIVER, NEAR MORGANTOWN, W. VA.

1903.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.3	2670	6.5	8520	10.7	23000	4.05	2180	3.5	1240	3.6	1470	6.0	7010	2.6	525	2.6	525	1.75	175	1.85	205	2.2	330
2,	4.1	2280	6.75	9300	7.1	10400	4.15	2380	3.4	1220	3.3	1110	5.6	5860	3.15	955	2.55	498	1.75	175	1.85	205	2.2	330
3,	10.25	21400	7.5	11700	5.95	6860	4.15	2380	3.35	1160	3.35	1160	4.45	2980	3.05	860	2.5	470	1.75	175	1.85	205	2.25	352
4,	9.05	17000	9.35	18100	5.25	4900	4.4	2880	3.65	1540	3.05	860	4.0	2090	2.85	698	2.35	398	1.75	175	1.85	205	2.25	352
5,	6.95	9920	8.95	16700	4.9	4000	5.7	6140	3.6	1470	2.85	698	4.2	2470	2.7	590	2.15	310	1.9	220	1.9	220	2.15	310
6,	5.85	6580	6.6	8830	4.85	3880	4.95	4120	3.4	1220	2.85	698	4.95	4120	2.45	445	2.15	310	2.2	330	2.1	290	2.15	310
7,	5.15	4630	5.7	6140	5.1	4500	4.8	3760	3.25	1060	3.85	1840	4.3	2670	2.65	558	2.05	272	2.2	330	2.25	352	2.15	310
8,	4.7	3530	5.15	4630	7.25	10900	6.9	9760	3.1	905	6.0	7010	4.05	2180	2.45	445	2.05	272	2.05	272	2.5	470	2.1	290
9,	3.95	2000	4.95	4120	8.4	14700	8.5	15100	3.05	860	5.0	4250	3.55	1400	2.45	445	2.05	272	3.4	1220	2.4	420	2.05	272
10,	3.65	1540	4.45	2980	6.9	9760	6.7	9140	2.9	735	4.3	2670	3.3	1110	2.35	398	2.15	310	3.45	1280	2.25	352	2.1	290
11,	3.75	1200	4.3	2670	6.05	7160	5.8	6430	2.85	698	3.95	2000	3.8	1760	2.3	375	2.15	310	3.0	815	2.2	330	2.15	310
12,	6.2	1000	5.4	5300	5.65	6000	5.4	5300	2.85	698	5.15	4630	4.3	2670	2.25	352	2.1	290	2.6	525	2.15	310	2.0	255
13,	5.25	700	6.1	7310	5.3	5030	5.3	5030	2.7	590	7.05	10200	5.1	4500	2.25	352	2.0	255	2.45	445	2.1	290	2.15	310
14,	5.7	500	5.3	5030	4.95	4120	5.1	4500	2.65	558	7.15	10600	5.65	6000	2.1	290	1.95	238	2.6	525	2.05	272	2.6	250
15,	5.95	400	6.0	7010	4.4	2880	4.95	4120	2.6	525	7.35	11200	4.75	3640	2.1	290	1.85	205	2.45	445	2.05	272	2.6	250
16,	4.45	500	11.25	25100	4.25	2570	5.85	6580	2.8	660	6.2	7610	4.05	2180	2.05	272	1.85	205	2.35	398	2.05	272	2.75	200
17,	4.2	700	8.4	14700	4.15	2380	5.85	6580	2.7	590	5.1	4500	3.6	1470	2.05	272	1.85	205	2.25	352	2.55	498	2.55	200
18,	3.9	700	6.45	8360	3.95	2000	5.85	6580	2.6	525	4.45	2980	3.6	1470	2.05	272	1.85	205	2.25	352	5.6	5860	2.55	200
19,	3.55	500	5.2	4760	3.75	1680	5.3	5030	2.55	498	4.05	2180	3.55	1400	2.15	310	2.35	398	2.4	420	4.5	3090	2.35	250
20,	3.35	700	5.1	4500	3.6	1470	4.75	3640	2.45	445	3.85	1840	4.4	2880	2.2	330	2.9	735	2.7	590	3.6	1470	2.45	445
21,	3.75	800	4.5	3090	4.7	3530	4.4	2880	2.4	420	5.2	4760	4.65	3420	2.15	310	2.4	420	2.55	498	3.1	905	4.35	2780
22,	4.15	700	4.35	2780	5.55	5720	4.25	2570	2.3	375	4.9	4000	3.8	1760	2.85	698	2.2	330	2.45	445	2.9	735	4.25	2570
23,	4.0	700	3.95	2000	8.1	13700	4.0	2090	2.65	558	5.0	4250	3.4	1220	2.5	470	2.05	275	2.35	308	2.85	698	3.8	1760
24,	3.75	600	4.15	2380	9.65	19200	3.8	1760	3.85	1840	5.65	6000	3.1	905	2.3	375	2.0	255	2.25	352	2.75	625	3.35	1160
25,	3.65	700	4.2	2470	6.75	9300	3.9	1920	4.6	3310	4.75	3640	2.85	698	2.1	290	1.95	238	2.15	310	2.6	525	4.8	3760
26,	3.5	800	4.05	2180	5.7	6140	3.9	1920	5.65	6000	4.05	2180	2.65	558	2.5	272	1.85	205	2.0	255	2.6	525	5.7	6140
27,	3.55	1000	4.3	2670	4.95	4120	4.4	2880	6.65	8980	3.65	1540	2.55	498	2.05	272	1.85	205	2.05	272	2.4	420	4.4	2880
28,	6.4	8210	11.45	25900	4.55	3200	4.15	2380	5.4	5300	4.1	2280	2.35	398	2.1	290	1.85	205	2.05	272	2.4	420	3.85	1840
29,	8.65	15600	-----	------	4.15	2380	3.9	1920	4.65	3420	8.85	16300	2.45	445	2.1	290	1.85	205	2.05	272	2.25	352	3.5	1340
30,	8.9	16500	-----	------	4.05	2180	3.65	1540	4.2	2470	7.7	12400	2.4	420	2.1	290	1.75	175	1.95	238	2.25	352	3.5	1340
31,	**8.3**	**14400**	-----	------	**4.05**	**2180**	-----	------	3.95	2000	-----	------	2.35	398	2.6	525	-----	-----	1.95	238	-----	------	3.2	1000

Note:—Discharge affected by ice conditions from about January 11 to 27 and about December 14 to 19, 1903, as determined by temperature records. The temperature was very low for a few days about February 18 and 19, 1903, but the discharge was probably not greatly affected by ice conditions, owing to the flood which immediately preceded this period. Discharges January 11 to 27 and December 14 to 19, 1903, estimated on the basis of climatologic reports on temperature and precipitation.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEAT RIVER, NEAR MORGANTOWN, W. VA.

1904.	JAN.		FEB.		MAR.		APR		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.			G H	Dis.	G H	Dis.	G H	Dis.
1,	3.3	1110	3.6	1470	6.55	8680	6.6	8830	6.25	7760	3.4	1220	3.6	1470	2.15	310	1.8	190	1.6	135	2.0	255	2.0	225
2,	3.25	1060	3.0	815	6.8	9450	6.7	9140	5.85	6580	3.45	1280	4.0	2090	2.25	352	1.85	205	1.85	205	2.0	255	2.05	272
3,	8.75	4000	3.25	1060	7.2	10700	5.95	6800	4.95	4120	3.5	1340	3.65	1540	2.15	310	1.85	205	1.9	220	1.9	220	2.2	330
4,	11.15	1800	3.15	955	8.35	14600	5.1	4500	5.0	4250	3.9	1920	3.35	1160	2.35	398	1.85	205	1.9	220	1.9	220	2.1	290
5,	11.15	1400	3.0	815	6.55	8680	4.55	3200	4.55	3200	3.85	1840	3.0	815	2.55	498	1.85	205	1.9	220	1.9	220	2.1	290
6,	11.15	1000	3.0	815	5.5	5580	4.3	2670	4.2	2470	4.8	3760	3.0	815	2.35	398	1.8	190	1.85	205	1.9	220	2.6	525
7,	11.15	900	4.9	4000	6.1	7310	4.15	2380	3.95	2000	4.3	2670	3.65	1540	2.25	352	1.75	175	1.85	205	1.82	196	2.5	470
8,	11.15	800	8.65	15600	7.45	11500	4.05	2180	3.75	1680	4.1	2280	3.5	1340	2.3	375	1.75	175	1.9	220	1.8	190	2.5	470
9,	11.15	800	6.45	8360	6.7	9140	4.05	2180	3.55	1400	3.85	1840	3.4	1220	2.15	310	1.75	175	1.8	190	1.8	190	2.5	470
10,	11.15	800	5.35	5160	5.7	6140	4.15	2380	3.75	1680	3.7	1610	3.3	1110	2.05	272	1.75	175	1.9	220	1.8	190	2.4	420
11,	11.15	800	4.65	3420	5.15	4630	4.0	2090	3.75	1680	3.5	1340	3.55	1400	2.05	272	1.75	175	1.95	238	1.8	190	2.35	398
12,	11.15	800	4.0	2090	5.05	4380	3.85	1840	3.45	1280	3.3	1110	3.5	1340	2.0	255	1.75	175	2.0	255	1.8	190	2.2	330
13,	11.15	800	3.6	1470	4.9	4000	3.8	1760	3.3	1110	3.1	905	3.35	1160	2.05	272	1.75	175	2.05	272	1.8	190	2.15	310
14,	11.15	800	3.65	1540	4.55	3200	3.85	1840	3.25	1060	2.9	735	3.05	860	2.05	272	1.85	205	2.75	625	1.8	190	2.05	272
15,	11.15	800	3.8	1760	5.15	4630	3.7	1610	3.4	1220	2.85	698	2.8	660	2.05	272	1.85	205	2.3	375	1.9	220	2.15	310
16,	11.15	800	3.4	1220	4.95	4120	3.95	2000	3.7	1610	2.85	698	2.7	590	1.95	238	2.08	283	2.2	330	1.95	238	2.15	310
17,	11.15	800	2.95	775	4.4	2880	5.05	4380	3.65	1540	2.75	625	2.55	498	1.95	238	1.95	238	2.15	310	1.88	214	2.1	290
18,	11.15	900	3.15	955	4.35	2780	4.65	3420	3.7	1610	2.9	735	2.55	498	1.95	238	2.02	262	2.05	272	1.9	220	2.2	330
19,	11.15	1200	3.0	815	4.45	2980	4.25	2570	7.2	10700	2.95	775	2.35	398	2.0	255	1.92	227	2.0	255	1.9	220	2.2	330
20,	11.15	4000	3.15	955	4.45	2980	4.0	2090	6.6	8830	2.7	590	2.3	375	1.95	238	1.85	205	2.0	255	1.9	220	2.2	330
21,	11.15	9600	3.65	1540	5.1	4500	3.8	1760	6.7	9140	3.25	1060	2.75	625	2.35	398	2.2	330	1.9	220	2.05	272	2.15	310
22,	21.15	15000	5.7	6140	5.65	6000	3.6	1470	6.55	8680	4.3	2670	3.0	815	2.1	290	2.1	290	2.0	255	2.1	290	2.1	290
23,	10.95	21000	5.45	5440	8.15	13900	3.45	1280	6.2	7610	4.75	3640	3.25	1060	2.4	420	1.9	220	2.0	255	2.35	398	2.0	255
24,	7.5	11700	6.05	7160	7.85	12900	3.35	1160	4.9	4000	3.45	1280	2.8	660	2.55	498	1.85	205	2.1	290	2.45	445	2.6	525
25,	5.95	6860	5.4	5300	6.4	8210	3.55	1400	4.45	2980	3.3	1110	2.6	525	2.55	498	1.8	190	2.1	290	2.4	420	8.2	14000
26,	5.05	4380	4.65	3420	5.85	6580	4.7	3530	4.1	2280	2.95	775	2.45	445	2.4	420	1.75	175	2.0	255	2.4	420	7.2	10700
27,	4.4	2880	4.2	2470	6.0	7010	6.75	9300	4.05	2180	2.85	698	2.55	498	2.2	330	1.75	175	2.0	255	2.35	398	7.2	10700
28,	3.8	1760	3.95	2000	5.3	5030	7.4	11400	4.15	2380	2.85	698	2.45	445	2.05	272	1.62	140	2.1	290	2.05	272	6.8	9150
29,	3.75	1680	5.15	4630	4.65	3420	6.5	8520	3.9	1920	3.05	860	2.5	470	1.95	238	1.6	135	2.0	255	2.1	290	5.4	5300
30,	3.65	1540	.....	.....	4.3	2670	6.05	7160	3.7	1610	3.8	1760	2.35	398	1.85	205	1.6	135	2.0	255	2.0	255	4.2	2470
31,	3.6	1470	.....	.....	4.35	2780	.....	.....	3.55	1400	.....	.....	2.2	330	1.85	205	.....	.....	2.0	255	.....	.....	3.85	1840

Note: Ice gorge from January 3 to 23, 1904. No ice during December on basis of comparison with chain gage heights.
Discharge estimated for ice period, January 3 to 23, 1904, on the basis of climatologic reports and a thorough study of run-off conditions during the period.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEAT RIVER, NEAR MORGANTOWN, W. VA.

1905. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.8	1760	2.95	450	5.35	1500	4.1	2280	4.4	2880	5.9	6720	3.7	1610	4.05	2180	2.7	590	2.0	255	3.55	1400	5.2	4760
2,	3.6	1470	2.85	450	4.55	1500	4.0	2090	4.05	2180	5.25	4900	4.15	2380	3.8	1760	2.65	558	2.0	255	3.35	1160	4.7	3530
3,	3.6	1470	2.9	450	4.1	1500	3.85	1840	3.85	1840	4.4	2880	3.8	1760	3.45	1280	2.5	470	2.0	255	3.15	955	8.25	14200
4,	3.65	1540	2.85	450	3.75	1680	3.8	1760	3.7	1610	3.75	1680	3.65	1540	3.05	860	2.5	470	2.1	290	3.1	905	8.0	13400
5,	3.45	1280	2.9	450	3.7	1610	3.8	1760	3.8	1760	3.55	1400	4.75	3640	2.9	735	2.45	445	2.05	272	3.0	815	6.15	7460
6,	3.4	1220	2.9	500	4.7	3530	4.2	2470	4.35	2780	3.4	1220	4.15	2380	3.4	1220	2.4	420	2.1	290	3.05	860	5.1	4500
7,	3.45	1280	3.1	700	5.55	5720	4.9	4000	3.95	2000	3.5	1340	3.8	1760	3.2	1000	2.4	420	2.1	290	3.4	1220	4.55	3200
8,	3.35	1160	3.4	1000	8.2	14000	5.05	4380	3.8	1760	3.65	1540	3.8	1760	3.35	1160	2.35	398	2.1	290	3.6	1470	4.2	2470
9,	3.2	1000	3.85	1200	11.25	25100	4.85	3880	3.8	1760	3.45	1280	4.05	2180	3.05	860	2.3	375	2.1	290	3.5	1340	4.0	2090
10,	3.2	1000	5.95	4500	12.65	30400	4.8	3760	3.55	1400	3.3	1110	3.7	1610	3.15	955	2.3	375	2.0	255	3.45	1280	3.9	1920
11,	3.3	1110	4.8	2500	8.75	16000	5.8	6430	3.45	1280	3.15	955	3.65	1540	3.15	955	2.85	698	2.0	255	3.35	1160	3.6	1470
12,	6.45	8360	4.35	1500	7.05	10200	5.75	6280	7.3	11000	3.65	1540	3.6	1470	3.15	955	4.15	2380	2.3	375	3.1	905	3.55	1400
13,	9.85	19900	7.4	2500	6.2	7610	4.75	3640	7.45	11500	4.55	3200	3.75	1680	3.0	815	4.1	2280	3.4	1220	3.0	815	3.45	1280
14,	7.05	10200	6.25	1500	5.8	6430	4.6	3310	5.9	6720	4.25	2570	4.45	2980	3.3	1110	3.6	1470	3.2	1000	3.0	815	3.4	1220
15,	5.45	5440	8.5	1000	5.4	5300	4.4	2880	8.5	15100	3.6	1470	3.85	1840	5.2	4760	3.05	860	2.9	735	2.9	735	3.3	1110
16,	4.85	3880	8.3	700	5.2	4760	4.2	2470	6.75	9300	3.25	1060	3.65	1540	5.6	5860	2.9	735	2.8	660	3.0	815	3.2	1000
17,	3.95	2000	8.35	600	5.75	6280	4.05	2180	6.2	7610	3.0	815	3.45	1280	5.45	5440	2.7	590	2.55	498	3.4	1220	3.15	955
18,	3.85	1840	7.65	500	6.05	7160	3.8	1760	5.25	4900	3.0	815	3.1	905	4.3	2670	2.65	558	2.4	420	3.55	1400	3.1	905
19,	3.8	1760	6.7	500	6.85	9600	3.7	1610	4.8	3760	3.0	815	2.9	735	4.0	2090	2.5	470	2.45	445	3.4	1220	3.2	1000
20,	3.8	1760	6.55	600	8.2	14000	3.7	1610	4.45	2980	3.0	815	3.8	1760	3.5	1340	2.45	445	6.6	8830	3.35	1160	3.2	1000
21,	3.8	1760	6.55	700	10.85	23600	4.6	3310	4.1	2280	3.05	860	4.3	2670	3.45	1280	2.4	420	6.0	7010	3.05	860	5.1	4500
22,	3.6	1470	7.0	700	9.35	18100	5.65	6000	3.85	1840	5.3	5030	3.7	1610	3.05	860	2.3	375	5.2	4760	2.8	660	5.85	6580
23,	3.5	1340	8.0	800	7.25	10900	5.35	5160	3.55	1400	5.25	4900	3.8	1760	2.9	735	2.3	375	4.65	3420	2.65	558	5.95	6860
24,	3.4	1220	7.9	800	6.1	7310	4.65	3420	3.5	1340	4.85	3880	5.5	5580	2.75	625	2.25	352	3.25	1060	2.45	445	6.05	7160
25,	3.2	1000	7.5	800	6.65	8980	4.35	2780	3.3	1110	5.9	6720	4.35	2780	4.35	2780	2.2	330	3.1	905	3.3	1110	4.95	4120
26,	2.8	660	7.85	1800	6.55	8680	4.05	2180	3,2	1000	5.0	4250	3.7	1610	5.25	4900	2.1	290	4.15	2380	3.3	1110	4.15	2380
27,	2.95	600	7.25	1500	6.05	7160	4.35	2780	3.1	905	6.9	9760	3.55	1400	4.25	2570	2.1	290	5.25	4900	3.3	1110	4.2	2470
28,	2.9	550	6.3	1500	5.6	5860	5.9	6720	3.0	815	5.45	5440	3.25	1060	3.75	1680	2.1	290	4.55	3200	3.3	1110	4.0	2090
29,	2.95	500	------	------	5.1	4500	5.4	5300	3.0	815	4.5	3090	3.2	1000	3.55	1400	2.0	255	3.9	1920	5.1	4500	4.15	2380
30,	3.0	500	------	------	4.85	3880	4.95	4120	2.95	775	3.9	1920	5.15	4630	2.9	735	2.0	255	3.8	1760	7.3	11000	4.25	2570
31,	3.15	450	------	------	4.65	3420	------	------	3.2	1000	------	------	4.6	3310	2.9	735	------	------	3.65	1540	------	------	4.15	2380

Note:—High gage heights February 13 to about March 3 caused by back water from ice gorge. Ice conditions probably prevailed from about January 27 to March 3. No ice during December on the basis of comparison with chain gage heights. Discharge January 27 to March 3, 1905, estimated on basis of climatologic reports.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEAT RIVER, NEAR MORGANTOWN, W. VA.

1908. Day.	NOV.		DEC.	
	G H	Dis.	G H	Dis.
1,			1.71	163
2,			1.71	163
3,			1.66	150
4,			1.66	150
5,			1.66	150
6,			1.66	150
7,			1.66	150
8,			1.86	208
9,			1.86	208
10,			1.99	252
11,			2.00	255
12,			2.32	384
13,			3.05	860
14,			2.90	735
15,			2.65	558
16,			2.35	398
17,			2.44	440
18,	1.61	138	2.70	590
19,	1.61	138	4.65	3420
20,	1.61	138	4.00	2090
21,	1.61	138	3.40	1220
22,	1.61	138	2.78	646
23,	1.74	172	2.60	525
24,	1.81	193	2.57	508
25,	1.81	193	2.50	470
26,	1.81	193	2.32	384
27,	1.76	178	2.35	398
28,	1.76	178	2.40	420
29,	1.71	163	2.42	430
30,	1.71	163	2.40	420
31,			2.35	398

Note:—Discharge unaffected by ice conditions during December, 1908.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEAT RIVER, NEAR MORGANTOWN, W. VA.

1909.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.41	1270	3.20	1000	5.00	4250	4.50	309	5.41	5410	3.14	915	3.56	1420	5.30	5030	3.12	925	2.67	570	3.37	1190	3.16	965
2,	2.98	799	3.10	905	4.73	3600	4.39	286	6.36	8090	5.08	4450	3.50	1340	4.24	2550	2.86	705	2.60	525	3.40	1220	3.09	896
3,	2.82	675	3.20	1000	5.36	5190	5.10	4500	6.57	8740	5.18	4710	3.38	1200	3.75	1680	2.75	625	2.56	503	3.21	1020	3.00	815
4,	2.68	577	3.35	1160	6.68	9080	5.41	5410	5.38	5250	4.49	3070	3.06	869	3.34	1150	2.80	660	2.45	445	3.14	945	2.91	743
5,	2.70	590	3.62	1500	5.63	5940	5.71	6170	5.25	4900	5.66	6030	2.87	712	3.11	915	2.92	751	2.43	435	3.11	915	2.87	712
6,	2.78	646	4.95	4120	5.08	4450	6.08	7250	4.84	3800	7.21	10800	2.75	625	2.97	791	2.87	712	2.36	402	3.01	824	2.85	698
7,	3.65	1540	5.25	4900	4.90	4030	5.97	6920	4.43	2940	5.82	6490	2.64	551	2.87	712	2.91	743	2.29	370	3.09	896	2.80	660
8,	3.56	1420	4.80	3760	5.90	6720	5.38	5250	4.14	2360	5.14	4600	2.54	492	2.80	660	2.76	632	2.26	357	2.86	705	3.27	1080
9,	3.08	887	4.30	2670	5.95	6860	4.53	3160	3.98	2060	7.02	10100	2.51	492	2.70	590	2.68	577	2.24	348	3.03	842	3.04	851
10,	3.18	985	5.96	6890	6.92	9820	4.47	3030	3.86	1900	6.20	7610	2.52	481	2.61	532	2.65	558	2.21	334	3.05	860	2.87	650
11,	3.10	905	6.90	9760	6.66	9020	4.20	2470	3.68	1580	7.68	12300	2.43	435	2.54	492	6.00	7010	2.24	348	4.82	3810	2.82	600
12,	3.13	935	5.45	5440	6.54	5690	4.12	2320	4.11	2300	6.57	8740	2.34	393	2.50	470	4.45	2980	2.82	675	4.32	2710	2.75	550
13,	3.45	1280	5.00	4250	4.98	4200	4.20	2470	3.75	1680	5.29	5000	2.41	425	2.42	430	3.70	1610	4.66	3440	3.98	2060	2.94	700
14,	3.47	1300	5.50	5580	4.80	3760	8.28	14300	3.56	1420	5.15	4630	2.49	465	2.33	384	3.25	1060	3.72	1640	3.70	1610	5.59	5830
15,	8.75	16000	5.50	5580	5.07	4420	8.01	13500	3.40	1220	5.35	5160	2.45	445	2.32	381	3.06	869	3.32	1130	3.53	1380	5.46	5470
16,	7.40	11400	7.20	10700	4.56	3220	6.22	7670	3.28	1090	5.11	4530	2.68	577	3.98	2060	5.43	5380	3.12	1240	3.36	1180	4.57	3240
17,	5.75	6280	7.12	10500	4.30	2670	5.33	5110	3.11	945	4.80	3760	2.50	470	5.35	5160	5.00	4250	3.53	1380	3.24	1050	3.98	2060
18,	4.80	3760	5.94	6840	4.14	2360	4.78	3710	3.03	842	6.94	9890	2.39	416	4.57	3240	4.66	2200	3.38	1200	3.19	995	3.95	1500
19,	4.05	2180	5.16	4660	3.94	1990	4.40	2880	2.99	807	6.13	7400	2.36	402	3.95	2000	3.45	1280	3.36	1180	3.20	1000	3.74	1200
20,	4.00	2090	5.20	4760	4.12	2320	4.36	2800	2.89	728	5.07	4420	2.31	380	3.61	1480	3.11	915	4.09	2260	3.11	915	3.65	1000
21,	4.13	2340	5.73	6230	4.18	2430	7.00	10400	2.86	705	4.38	2840	2.28	366	4.16	2390	2.92	751	3.92	1950	3.01	824	3.23	800
22,	4.37	2820	5.40	5300	4.02	2130	9.06	17000	3.06	869	4.00	2090	2.26	357	3.37	1190	2.82	675	3.71	1620	3.01	824	2.91	500
23,	4.58	3270	5.47	5500	3.83	1810	7.84	12800	4.19	2450	3.86	1860	2.34	393	3.19	995	2.73	611	4.00	2090	3.04	851	2.65	450
24,	5.80	6430	7.95	13200	3.68	1580	7.50	11700	3.60	1470	3.72	1640	2.41	425	2.99	807	2.87	712	9.16	17400	3.11	915	------	450
25,	5.40	5300	7.58	12000	3.86	1860	6.32	7970	3 40	1220	3.45	1280	3.41	1230	2.83	682	4.16	2390	6.59	8800	------	1140	2.77	450
26,	4.80	3760	6.30	7910	4.58	3270	5.71	6170	3.24	1050	3.29	1100	3.11	915	2.68	577	3.64	1530	5.37	5220	3.53	1380	2.65	400
27,	4.40	2880	5.64	5970	5.27	4950	5.46	5470	3.38	1200	3.16	965	2.77	639	2.63	544	3.21	1020	4.71	3550	3.37	1190	2.87	450
28,	3.85	1840	5.34	5140	5.18	4710	5.18	4710	3.98	2060	3.49	1330	2.63	544	2.51	492	3.07	878	4.24	2550	3.19	995	2.83	400
29,	3.60	1470	------	------	5.48	5520	5.00	4250	4.00	2090	4.19	2450	2.58	514	2.68	577	2.87	712	3.88	1890	3.11	915	2.68	350
30,	3.80	1760	------	------	5.07	4420	4.90	4000	3.56	1420	3.95	2000	2.63	544	3.70	1610	2.77	639	3.72	1640	3.06	869	2.61	300
31,	3.45	1280	------	------	4.78	3710	------	------	3.34	1150	------	------	8.53	15200	3.51	1350	------	------	3.49	1330	------	------	2.45	250

Discharge probably unaffected by ice conditions January to March, 1909.
Discharge about December 10 to 13 and 18 to 31, 1909, affected by ice.
Discharge estimated December 10 to 13 and 18 to 31, 1909.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEAT RIVER, NEAR MORGANTOWN, W. VA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	*2.47	250	3.71	2220	6.30	11500	2.93	838	3.64	2050	3.96	2880	3.17	1140	2.55	512	2.26	357	2.34	395	2.38	415	3.57	1890
2,	*2.82	350	3.48	1690	6.02	10400	2.93	838	3.43	1580	4.98	6410	3.00	915	2.54	506	2.34	395	2.23	344	2.31	380	3.17	1140
3,	10.07	26700	3.62	2000	5.41	8050	2.93	838	3.34	1410	5.10	6870	2.95	860	2.39	420	2.42	436	2.14	306	2.25	352	3.06	993
4,	8.02	18800	3.77	2380	4.89	6070	2.92	827	3.26	1280	4.97	6380	3.76	2350	2.33	390	3.32	1380	2.10	294	2.22	339	3.01	928
5,	5.82	9650	3.84	2550	4.55	4820	3.10	1040	3.04	967	4.57	4890	4.26	3820	2.31	380	2.91	816	2.08	283	2.32	385	2.90	80
6,	5.68	9100	3.71	2220	4.33	4050	3.11	1060	3.04	967	6.18	11100	4.23	3720	3.23	344	2.92	827	2.06	276	2.30	375	*2.67	601
7,	7.50	16300	3.30	1340	4.27	3850	3.08	1020	2.98	893	5.64	8950	3.75	2320	2.43	442	3.35	1430	2.01	258	2.25	325	3.03	628
8,	6.28	11400	*3.52	1200	4.21	3650	3.04	967	3.01	928	4.84	5890	3.88	2660	2.38	415	2.99	904	1.98	248	2.21	334	*2.79	628
9,	5.24	7400	*3.37	1200	3.85	2580	3.04	967	3.14	1100	4.41	4320	3.84	2550	2.27	362	2.73	650	2.05	272	2.17	318	*2.49	628
10,	4.45	4460	*3.73	1600	3.67	2130	2.94	849	3.20	1180	4.57	4890	3.54	1820	2.23	344	2.64	577	1.93	230	2.16	314	*2.59	628
11,	3.90	2710	*4.16	1400	3.47	1670	2.89	796	3.32	1380	5.06	6720	3.45	1620	2.21	334	2.51	486	1.90	220	2.11	294	*2.57	628
12,	3.80	2450	*3.78	1200	3.38	1480	2.81	720	4.23	3720	5.24	7400	3.31	1360	2.19	326	2.48	469	2.12	298	2.13	302	*2.50†	628
13,	3.70	2200	*3.43	1000	3.35	1430	2.77	684	5.06	6720	5.30	7630	3.29	1320	2.18	322	2.40	425	2.20	330	2.15	310	*2.49†	628
14,	5.42	8090	*3.26	1000	3.27	1290	2.74	659	4.42	4360	4.92	6190	3.84	2550	2.12	298	2.51	486	2.12	298	2.15	310	*2.47†	628
15,	5.10	6870	*3.10	1200	3.13	1090	2.95	860	3.96	2880	4.60	5000	3.76	2350	2.07	280	2.52	493	2.06	276	2.15	310	*2.42†	628
16,	4.86	5960	3.61	1980	3.13	1090	2.89	796	3.74	2300	4.70	5370	3.51	1750	2.12	298	2.53	500	2.00	255	2.13	302	*2.41†	628
17,	4.00	3000	6.78	13400	3.05	980	2.93	838	3.54	1820	8.84	21700	3.31	1360	2.13	302	2.52	493	1.94	234	2.11	294	*2.38†	628
18,	6.61	12700	6.80	13500	3.13	1090	3.08	1020	3.44	1600	6.43	12000	3.17	1140	2.11	294	2.44	447	1.91	224	2.09	286	*2.64†	628
19,	8.36	19800	5.78	9490	3.06	993	3.37	1470	3.38	1480	11.79	33700	3.35	1430	2.09	286	2.30	375	1.91	224	2.09	286	‡	628
20,	5.88	9880	4.98	6410	3.01	928	3.47	1670	3.26	1280	7.71	17100	3.15	1120	2.07	280	2.22	339	1.87	211	2.05	272	*2.78†	628
21,	5.52	8480	4.95	6300	3.00	915	3.71	2220	3.26	1280	5.68	9100	2.99	904	2.06	276	2.16	314	1.88	214	2.03	266	*2.88†	628
22,	6.07	10600	7.04	14500	3.19	1170	4.19	3590	3.24	1250	5.47	8280	2.87	776	1.97	244	2.13	302	1.89	217	2.04	269	*2.63†	628
23,	5.30	7630	6.63	12800	3.23	1230	4.27	3850	3.16	1130	4.71	5410	2.77	684	1.94	234	2.13	302	1.92	227	2.09	286	*2.68†	628
24,	4.50	4640	5.28	7550	3.15	1120	4.45	4460	3.14	1100	4.21	3650	2.63	569	2.13	302	7.12	298	1.92	227	2.13	302	*4.28†	628
25,	4.20	3620	4.59	4960	3.13	1090	4.82	5810	3.38	1480	3.95	2860	2.59	538	2.07	280	2.10	290	1.95	238	2.22	339	*3.88†	628
26,	3.87	2630	4.14	3430	3.15	1120	4.80	5740	4.04	3120	3.74	2300	2.53	500	2.04	269	2.04	269	2.33	390	2.73	650	*3.48†	628
27,	4.48	4570	4.07	3210	3.17	1140	4.67	5260	3.79	2420	3.45	1620	2.48	469	2.06	276	1.98	248	2.23	344	3.19	1170	*3.28†	628
28,	4.96	6340	4.95	6300	3.07	1010	4.52	4710	3.54	1820	3.38	1480	2.43	442	2.04	269	1.97	244	2.20	330	3.05	980	*3.03†	628
29,	4.50	4640	-----	-----	3.03	954	4.04	3120	3.36	1450	3.39	1500	2.48	469	1.98	248	2.42	436	2.21	334	4.53	4750	*4.48†	628
30,	3.77	2380	-----	-----	3.00	915	3.86	2610	3.24	1250	3.39	1500	2.49	474	1.94	234	2.36	405	2.37	410	4.17	3520	7.38	15800
31,	3.83	2530	-----	-----	2.97	882	-----	-----	3.22	1220	-----	-----	2.62	561	1.93	230	-----	-----	2.47	464	-----	-----	6.09	10700

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*Ice conditions Jan. 1 and 2, Feb. 8-15, and Dec. 7-29; discharge estimated.
†Gage heights to top of ice.
‡Observer sick.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CHEAT RIVER, NEAR MORGANTOWN, W. VA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.97	6490	5.68	9180	4.41	4290	4.07	3300	3.77	2450	2.96	860	3.09	1040	2.09	290	7.02	14300	4.33	3950	3.13	1120	3.92	2710
2,	5.87	9960	5.08	6870	4.07	3300	3.87	2710	3.98	3000	3.22	1180	2.93	860	2.03	272	5.12	6870	6.50	12300	3.02	915	3.66	2200
3,	6.79	13500	4.74	5370	3.81	2450	4.06	3300	3.81	2450	3.03	980	2.77	668	2.05	272	4.16	3620	7.34	15500	2.00	915	3.60	1960
4,	6.63	12700	4.70	5370	3.65	1960	4.51	4640	3.62	1960	2.82	710	2.69	625	2.09	290	3.63	1960	5.61	8790	2.92	805	3.52	1730
5,	5.24	7250	4.59	5000	3.49	1730	8.82	21600	3.45	1620	2.69	625	2.59	545	2.47	452	3.40	1520	4.78	5740	2.86	758	3.34	1430
6,	4.46	4640	4.40	4290	3.77	2450	8.13	18700	3.32	1340	2.70	625	2.55	512	2.35	400	3.32	1340	4.34	3950	2.92	805	3.20	1180
7,	4.09	3300	4.16	3620	5.48	8400	6.49	12300	3.18	1180	5.34	7630	2.80	710	2.38	425	3.33	1430	5.04	6490	4.10	3300	3.17	1180
8,	3.82	2450	4.02	3000	4.77	5740	5.77	9570	3.18	1180	4.92	6110	3.05	980	2.39	425	3.16	1120	8.45	19900	4.98	6490	3.21	1180
9,	3.83	2450	4.35	4290	4.55	5000	6.11	10700	3.10	1040	3.96	3000	2.95	860	2.33	400	3.20	1180	5.98	10400	4.32	3950	3.26	1260
10,	3.56	1960	4.42	4290	4.96	6490	5.79	9570	3.06	980	3.52	1730	3.25	1260	2.34	400	3.52	1730	4.94	6110	3.96	3000	3.36	1430
11,	3.36	1430	4.06	3300	5.77	9570	5.01	6490	2.98	915	3.24	1260	3.01	915	2.21	330	3.32	1340	4.92	6110	3.70	2200	3.74	2200
12,	3.82	2450	3.83	2450	5.09	6870	4.58	5000	2.92	805	3.63	1960	2.96	860	2.12	290	3.49	1730	5.48	8400	3.58	1960	3.92	2710
13,	10.40	28000	3.76	2450	5.03	6490	4.22	3620	2.86	758	3.59	1960	3.59	1960	2.18	330	3.76	2450	4.92	6110	3.60	1960	3.40	1520
14,	9.02	22400	3.70	2200	5.75	9570	4.10	3300	2.77	668	3.79	2450	3.09	1040	------	*405	3.50	1730	4.48	4640	3.56	1960	3.35	1430
15,	7.28	15500	3.93	2710	5.00	6490	5.51	8400	2.74	668	3.59	1960	2.79	710	2.52	480	4.82	5470	4.49	4640	3.50	1730	4.35	4290
16,	7.20	15000	3.88	2710	4.69	5370	5.38	8010	2.66	585	3.35	1430	2.59	545	3.02	915	7.79	17500	5.45	8010	3.50	1730	5.30	7630
17,	5.60	8790	3.73	2200	4.27	3950	4.52	4640	2.64	585	3.02	915	2.50	480	2.52	480	7.12	14700	4.92	6110	3.46	1620	5.81	9570
18,	4.82	5740	3.63	1960	4.34	3950	4.47	4640	2.56	512	5.27	7630	2.41	425	2.30	375	5.32	7630	7.23	15100	4.18	3620	4.86	6110
19,	4.18	3620	3.69	2200	4.35	4290	4.24	3620	2.56	512	6.13	10700	2.37	400	2.38	425	4.44	4290	6.42	11900	5.16	7250	4.40	4290
20,	3.99	3000	3.89	2710	5.97	10400	4.53	4640	2.56	512	4.59	5000	2.33	400	2.24	352	4.46	4640	5.26	7630	4.70	5370	3.92	2710
21,	3.86	2710	3.99	3000	5.27	7630	5.38	8010	2.66	585	3.97	3000	2.33	400	2.14	310	4.06	3300	4.62	5000	4.12	3300	3.78	2450
22,	4.38	4290	3.77	2450	4.74	5370	5.27	7630	2.78	710	3.63	1960	2.31	375	2.06	272	4.15	3620	4.24	3620	3.92	2710	3.86	2710
23,	4.93	6110	3.61	1960	4.45	4290	5.88	9960	2.68	625	3.29	1340	2.35	400	2.03	272	4.35	4290	4.22	3620	3.70	2200	4.08	3300
24,	4.36	4290	3.54	1730	4.41	4290	5.38	8010	2.68	625	3.11	1040	2.37	400	2.04	272	3.86	2710	4.19	3620	3.61	1960	5.26	7630
25,	4.10	3300	3.45	1620	3.99	3000	4.88	6110	2.72	625	3.08	1040	2.33	400	------	*448	3.54	1730	3.94	2710	3.94	2710	4.70	5370
26,	4.35	4290	3.89	2710	3.83	2450	4.47	4640	2.72	625	4.19	3620	2.32	375	2.72	625	3.42	1520	3.72	2200	3.92	2710	4.63	5000
27,	6.34	11500	4.41	4290	3.72	2200	4.17	3620	2.70	625	4.73	5370	2.26	352	2.60	545	3.33	1430	3.58	1960	3.82	2450	7.36	15900
28,	7.00	14300	4.83	5740	3.82	2450	3.92	2710	3.86	2710	4.23	3620	2.22	330	2.76	668	3.54	1730	3.45	1620	3.84	2450	5.76	9570
29,	6.67	13100	------	------	3.83	2450	3.81	2450	3.27	1260	3.68	2200	2.21	330	5.65	8790	4.83	5740	3.34	1430	4.02	3000	4.89	6110
30,	13.59	41200	------	------	3.81	2450	3.78	2450	3.10	1040	3.34	1430	2.14	310	6.69	13100	4.93	6110	3.28	1340	4.16	3620	4.51	4640
31,	7.63	16700	------	------	4.23	3620	------	------	2.98	915	------	------	2.13	310	8.82	21600	------	------	3.20	1180	------	------	5.48	8400

*Discharge interpolated. Relation of gage heights to discharge probably not affected by ice.
No notes made by observer relative to ice.

ESTIMATED MONTHLY DISCHARGE OF CHEAT RIVER, NEAR MORGANTOWN, W. VA.

(Drainage area 1,380 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
*1899.					
July (8-31),	3190	750	1450	1.05	0.94
August,	2630	375	940	.681	0.79
September,	4830	430	1090	.790	0.88
October,	495	280	350	.254	0.29
November,	4490	570	2010	1.46	1.63
December.	13800	970	3420	2.48	2.86
†1900.					
July,	8970	750	2440	1.77	2.04
August,	2150	240	635	.460	.53
September,	750	165	249	.180	.20
October,	750	165	348	.252	.29
November,	‡20000	280	3310	2.40	2.68
December,	16400	1100	4130	2.99	3.45
1902.					
August (21-31),	860	272	432	.313	.13
September,	558	148	252	.183	.20
October,	6430	445	1490	1.08	1.24
November,	13900	352	1760	1.28	1.43
December,	24400	1400	7410	5.37	6.19
1903.					
January,§	21400	400	4470	3.24	3.74
February,	25900	2000	7830	5.67	5.90
March,	23000	1470	6450	4.67	5.38
April,	15100	1540	4450	3.22	3.59
May,	8980	375	1680	1.22	1.41
June,	16300	698	4560	3.30	3.68
July,	7010	398	2280	1.65	1.90
August,	955	272	423	.307	.35
September,	735	175	306	.222	.25
October,	1280	175	412	.299	.24
November,	5860	205	705	.511	.57
December,§	6140	200	1040	.753	.87
The year,	25900	175	2880	2.09	27.98

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*Discharge for low stages during 1899 open to question, probably due to low water measurements, which determined rating curve, being affected by backwater, hence discharges may be too high.

†Discharges for low stages during 1900 open to question, probably due to low water measurements, which determined rating curve, being affected by backwater, hence discharges may be too high.

‡Estimated from hydrograph comparison of this station with Youghiogheny River, at Friendsville, Md.

§Ice conditions Jan. 11-27, and Dec. 14-19; discharge estimated.

ESTIMATED MONTHLY DISCHARGE OF CHEAT RIVER, NEAR MORGANTOWN, W. VA.

(Drainage area 1,380 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1904.					
January,*	21000	800	3330	2.41	2.78
February,	15600	775	3180	2.30	2.48
March,	14600	2670	6500	4.71	5.43
April,	11400	1160	3830	2.78	3.10
May,	10700	1060	3550	2.57	2.96
June,	3760	590	1420	1.03	1.15
July,	2090	330	876	.635	.73
August,	498	205	319	.231	.27
September,	330	135	202	.146	.16
October,	625	135	261	.189	.22
November,	415	190	257	.186	.21
December,	14000	255	2030	1.47	1.70
The year,	21000	135	2150	1.55	21.19
1905.					
January,†	19900	450	2560	1.86	2.14
February,†	4500	450	1090	.790	.82
March,†	30400	1500	8910	6.46	7.45
April,	6720	1610	3410	2.47	2.76
May,	15100	775	3460	2.51	2.89
June,	9760	815	2800	2.03	2.26
July,	5580	735	2060	1.49	1.72
August,	5860	625	1820	1.32	1.52
September,	2380	255	608	.441	.49
October,	8830	255	1610	1.17	1.35
November,	11000	445	1470	1.07	1.19
December,	14200	905	3620	2.62	3.02
The year,	30400	255	2780	2.02	27.61
1908.					
November 18-30,	193	138	163	.118	.06
December,	3420	150	558	.404	.47
1909.					
January,	16000	577	2860	2.7	2.39
February,	13200	905	5620	4.07	4.24
March,	9820	1580	4390	3.18	3.67
April,	17000	2320	6310	4.57	5.10
May,	8740	705	2380	1.72	1.98
June,	12300	945	4740	3.43	3.83
July,	15200	357	1090	.790	.91
August,	5160	384	1360	.986	1.14
September,	7010	558	1480	1.07	1.19
October,	17400	334	2160	1.57	1.81
November,	3810	705	1200	.870	.97
December,‡	5830	------------	1130	.819	.94
The year,	17400	------------	2890	2.10	28.17

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*Ice conditions Jan. 3-23, discharge estimated.

†Ice conditions Jan. 27,-Mar. 3; discharge estimated.

‡Ice conditions December 10 to 13 and 18 to 31, 1909, discharge estimated.

ESTIMATED MONTHLY DISCHARGE OF CHEAT RIVER, NEAR MORGANTOWN, W. VA.

(Drainage area 1,380 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
*1910.					
January,	26700	‡250	7620	5.52	6.36
February,	14500	‡1000	4570	3.31	3.45
March,	11500	882	2600	1.88	2.17
April,	5810	659	2000	1.45	1.62
May	6720	893	1820	1.32	1.52
June,	33700	1480	7440	5.39	6.01
July,	3820	442	1440	1.04	1.20
August,	512	230	322	.233	.27
September,	1430	244	513	.372	.42
October,	464	211	286	.207	.24
November,	4750	266	635	.460	.51
December,	15800		1530	1.11	1.28
The year,	26700		2550	1.85	25.05
†1911.					
January,	41200	1430	9440	6.84	7.89
February,	9180	1620	3560	2.58	2.69
March,	10400	1730	4810	3.49	4.02
April,	21600	2450	6810	4.93	5.50
May	3000	512	1100	.797	.92
June,	10700	625	2780	2.01	2.24
July,	1960	310	638	.462	.53
August,	21600	272	1770	1.28	1.48
September,	17500	1120	4300	3.12	3.48
October,	19900	1180	6450	4.67	5.38
November,	7250	758	2620	1.90	2.12
December,	15900	1180	4190	3.04	3.50
The year,	41200	272	4040	2.93	39.75

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*Daily discharge determined by means of a discharge rating curve that is well defined between gage heights 1.5 and 6.5 feet.

Daily discharge January 1 and 2, February 8 to 15, and December 7 to 29, estimated, because oof ice, on basis of climatologic records, discharge of adjacent drainage areas and gage observers notes.

Mean discharge December 7 to 29 estimated about 628 second-feet, varying from about 250 to 3,000 second-feet.

‡Estimated.

†Daily discharge determined by means of discharge rating curve that is well defined between gage heights 1.5 and 6.5 feet.

TYGART RIVER

DESCRIPTION OF BASIN.

The Tygart, also called Tygart's Valley river, rises in the southern part of Randolph county, W. Va., and flows in a general northerly direction to its junction with the West Fork river, near Fairmount, W. Va.

Its length is approximately one hundred miles while its drainage area, above the mouth, is approximately 1420 square miles. The elevation of the hills at the source is approximately 3500 feet, while at its mouth the elevation is about 860 feet. In the upper portions the country is mountainous, the slopes of the valleys steep and, in many places, precipitous and the fall of the stream is rapid. As the river approaches its confluence with the West Fork it flows through a rolling country. There are no lakes, ponds or swamps on the drainage area and the flow is flashy. There are many tributaries, the largest of which are Buchanan river and Middle Fork river. Its watershed is underlain by very valuable and extensive coal beds and contains oil and gas in abundance. At the headwaters there is still some timber, but over the general basin the mountains are sparsely forested. There are several large towns in the drainage basin the most important of which are Grafton and Phillipi. Little water-power has been developed although the main stream and its tributaries afford ample opportunity.

The mean annual precipitation over this watershed is from 45 to 50 inches.

The discharge has been measured since 1907, at Fetterman and Bellington, W. Va.,

OHIO BASIN—STATION NO. 24.

TYGART RIVER AT FETTERMAN, W. VA.

DESCRIPTION OF STATION.

This station was established on June 3rd, 1907, by the United States Geological Survey, who have maintained and operated it since that date. It is located on the iron, highway bridge, about 1,000 feet from the B. & O. R. R. station at Fetterman, Taylor county, W. Va., and about eighteen miles above the mouth.

The channel is straight for over 500 feet above and below the station. The banks are high and not subject to overflow. The bed of the stream is hard and firm.

Discharge measurements are taken from the downstream side of the bridge, the initial point for soundings being the face of the right abutment, downstream side of the bridge.

A standard chain gage is located on the left of the middle pier on the downstream side of the bridge. The length of chain, from the bottom of the weight to the marker, is 32.37 feet. Bench mark No. 1 is the southwest corner of the lower right abutment of the bridge, marked with black paint; elevation 31.46 feet above gage datum, which is arbitrary. Bench mark No. 2 is a file mark on the upstream and right edges of the first vertical compression member from the abutment, downstream side of left span, marked above and below with black paint; elevation 37.01 feet above gage datum. The gage is read twice daily by Joseph Gerken.

Since the establishment of this station 17 discharge measurements have been made.

The following data have been furnished by the United States Geological Survey.

DISCHARGE MEASUREMENTS OF TYGART RIVER, AT FETTERMAN, W. VA.

(Drainage area 1,340 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
	1907.		Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
1	June 3,	Horton,	271	1,890	1.64	5.68	3,100	
2	June 8,	do	271	1,970	1.92	6.02	3,790	
3	Aug. 10,	Horton & Padgett,	271	1,800	1.38	5.39	2,480	
4	Sept. 15,	Horton,	265	1,500	0.53	4.30	794	
	1909.							
5	May 19,	Horton,	267	1,470	0.49	4.20	722	
6	Nov. 16,	do	368	1,580	0.68	4.56	1,080	
7	Dec. 5,	Parker,	259	1,410	0.44	4.11	620	
	1910.							
8	Feb. 18,	Bailey,	271	2,930	4.03	9.56	11,800	0.6 msmt.
9	Feb. 19,	do	271	2,470	3.02	7.85	7,470	0.6 msmt.
10	Feb. 21,	do	271	2,040	1.97	6.35	4,020	Surface msmt.
11	Aug. 20,	do	65	61	1.14	3.05	70	Not at regular section.
12	Oct. 8,	do	92	95	1.27	3.24	122	Not at regular section.
	1911.							
13	Jan. 16,	Bailey,	272	3,300	3.82	10.92	12,600	
14	Jan. 16,	do	272	3,250	3.82	10.70	12,400	0.6 msmt.
15	Jan. 18,	do	272	2,130	2.17	6.56	4,620	0.6 msmt.
16	Jan. 31,	do	272	4,540	5.04	15.39	22,900	0.2 & 0.8 msmt.
17	Oct. 30,	Perwien,	268	1,520	0.57	4.37	866	0.2 & 0.8 msmt.

DISCHARGE TAGLE FOR TYGART RIVER, AT FETTERMAN, W. VA., FROM JUNE 3, 1907, TO DEC. 31, 1910.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
2.00	4	.40	916	.80	5002	.20	9480	.50	13980
.10	6	.50	1040	.90	5186	.30	9670	.60	14196
.20	9	.60	1176	7.00	5370	.40	9860	.70	14412
.30	12	.70	1324	.10	5554	.50	10050	.80	14628
.40	16	.80	1484	.20	5738	.60	10240	.90	14844
.50	20	.90	1650	.30	5922	.70	10430	12.00	15060
.60	25	5.00	1820	.40	6107	.80	10620	.10	15284
.70	32	.10	1990	.50	6292	.90	10810	.20	15508
.80	40	.20	2162	.60	6477	10.00	11000	.30	15732
.90	50	.30	2334	.70	6662	.10	11190	.40	15956
3.00	63	.40	2506	.80	6848	.20	11380	.50	16180
.10	80	.50	2680	.90	7034	.30	11570	.60	16404
.20	103	.60	2854	8.00	7220	.40	11760	.70	16628
.30	134	.70	3030	.10	7406	.50	11950	.80	16852
.40	172	.80	3206	.20	7592	.60	12140	.90	17076
.50	218	.90	3382	.30	7780	.70	12330	13.00	17300
.60	268	6.00	3560	.40	7968	.80	12520	14.00	19600
.70	323	.10	3738	.50	8156	.90	12710	15.00	21900
.80	384	.20	3916	.60	8344	11.00	12900	16.00	24300
.90	451	.30	4096	.70	8532	.10	13116	17.00	26700
4.00	525	.40	4276	.80	8720	.20	13332	18.00	29100
.10	607	.50	4456	.90	8910	.30	13548	19.00	31600
.20	699	.60	4638	9.00	9100	.40	13764	20.00	34100
.30	802	.70	4820	.10	9290				

Note:—The above table is not applicable for ice or obstructed-channel conditions. It is based on 16 discharge measurements made during 1907-1911 and is fairly well defined below gage height 2.9 feet; well defined between gage heights 3.0 feet and 7.0 feet and fairly well defined above gage height 7.1 feet. Above gage height 16.0 feet the rating curve is extended on a tangent.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF TYGART RIVER, AT FETTERMAN, W. VA.

1907.	JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1, -------	------	------	5.15	2080	4.5	1040	4.3	802	4.12	607	5.4	2510	4.85	1570
2, -------	------	------	6.3	4100	4.4	916	4.25	750	4.1	607	5.5	2680	4.75	1400
3, -------	5.7	3030	6.6	4640	4.3	802	4.25	750	4.08	607	7.4	6110	4.7	1320
4, -------	5.6	2850	5.5	2680	4.28	802	4.25	750	4.1	607	7.75	6760	4.55	1110
5, -------	5.4	2590	4.9	1650	4.15	653	4.65	1250	6.05	3650	6.95	5280	4.5	1040
6, -------	6.6	4640	4.55	1110	4.65	1250	5.0	1820	7.4	6110	6.65	4730	4.35	859
7, -------	6.35	4190	4.55	1110	4.6	1180	4.6	1180	5.55	2770	8.85	8820	4.3	802
8, -------	6.05	3650	4.45	978	4.4	916	4.4	916	5.7	3030	8.95	9000	4.2	699
9, -------	10.9	12700	4.8	1480	4.5	1040	4.25	750	8.65	8440	7.6	6480	4.45	978
10, -------	8.8	8630	9.1	9290	5.25	2250	4.5	1040	6.8	5000	7.05	5460	6.75	4910
11, -------	6.3	4100	8.25	7690	6.1	3740	4.7	1320	5.6	2850	6.9	5190	11.8	14600
12, -------	6.0	3560	8.15	7500	5.05	1900	4.95	1740	5.15	2080	6.6	4640	8.4	7970
13, -------	6.4	6110	8.15	7500	4.6	1180	4.65	1250	4.9	1650	6.0	3560	6.55	4550
14, -------	13.3	18000	7.2	5740	4.35	859	4.45	978	4.75	1400	5.5	2680	8.0	7220
15, -------	12.6	16400	5.9	3380	4.15	653	4.35	859	4.65	1250	5.15	2080	9.95	10900
16, -------	8.95	8910	5.3	2330	4.0	525	4.15	653	4.55	1110	4.95	1740	9.05	9200
17, -------	6.5	4460	12.7	16600	4.0	525	4.05	566	4.48	1020	4.75	1400	7.0	5370
18, -------	5.7	3030	19.8	33600	4.0	525	4.15	653	4.35	859	4.6	1180	6.15	3830
19, -------	5.25	2250	15.6	23300	4.15	653	5.05	1900	4.15	654	5.0	1820	5.75	3120
20, -------	4.75	1400	9.15	9380	4.05	566	5.0	1820	4.12	607	5.0	1820	5.45	2590
21, -------	4.7	1320	6.75	4910	3.95	488	4.55	1110	4.12	607	5.0	1820	5.05	1900
22, -------	4.55	1110	5.6	2850	3.88	451	4.5	1040	4.1	607	4.9	1650	4.95	1740
23, -------	4.55	1110	5.45	2590	4.15	653	4.4	916	4.02	525	4.8	1480	5.75	3120
24, -------	4.5	1040	5.85	3290	8.6	8340	4.45	978	3.98	525	6.6	4640	8.75	8630
25, -------	5.45	2590	6.45	4370	11.2	13300	4.35	859	3.9	451	8.0	7220	8.3	7780
26, -------	4.55	1110	5.75	3120	9.1	9290	4.3	802	3.8	384	7.2	5740	6.5	4460
27, -------	4.5	1040	5.75	3120	6.2	3920	4.15	653	3.9	451	6.4	4280	5.6	2850
28, -------	4.45	978	5.0	1820	5.45	2590	4.05	566	5.4	2510	5.65	2940	5.45	2590
29, -------	4.25	750	4.55	1110	4.9	1650	4.1	607	7.7	6660	5.45	2590	5.4	2510
30, -------	4.3	802	4.8	1480	4.75	1400	4.2	699	6.55	4550	5.1	1990	5.25	2250
31, -------	------	------	4.85	1570	4.45	978	------	------	5.75	3120	------	------	5.35	2420

Relation of gage heights to discharge not affected by ice

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF TYGART RIVER AT FETTERMAN, WEST VIRGINIA.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.4	2510	5.55	2770	5.95	3470	11.0	12900	4.65	1250	5.6	2850	3.6	268	4.35	859	3.25	118	2.6	25	2.4	16	2.7	32
2,	5.35	2420	5.5	2680	13.35	18100	10.25	11500	4.75	1400	5.0	1820	3.6	268	3.85	418	3.2	103	2.6	25	2.4	16	2.7	32
3,	5.15	2080	5.55	2770	11.05	13000	8.55	8250	4.95	1740	4.75	1400	3.6	268	3.65	296	3.25	118	2.55	22	2.35	14	2.7	32
4,	5.05	1900	5.9	3380	8.2	7590	7.2	5740	5.7	3030	4.8	1480	3.5	218	3.6	268	3.25	118	2.5	20	2.3	12	2.75	36
5,	5.1	1990	6.15	3830	6.7	4820	5.95	3470	12.75	16700	5.4	2510	3.6	268	3.6	268	3.2	103	2.5	20	2.3	12	2.8	40
6,	5.02	1850	10.1	11200	7.2	5740	5.65	2940	13.0	17300	5.5	2680	4.3	802	3.55	243	3.15	92	2.5	20	2.3	12	2.9	50
7,	4.95	1740	8.4	7970	9.2	9480	5.35	2420	11.55	14100	4.85	1570	4.35	859	3.5	218	3.1	80	2.5	20	2.3	12	2.95	56
8,	4.95	1740	6.6	4640	8.4	7970	5.4	2510	13.45	18300	4.55	1110	4.25	750	3.8	384	3.08	77	2.45	18	2.3	12	3.1	80
9,	4.75	1400	5.7	3030	12.1	15300	8.35	7870	10.6	12100	4.4	916	4.1	607	4.0	525	3.02	66	2.4	16	2.3	12	3.1	80
10,	4.65	1250	5.5	2680	10.15	11300	8.55	8250	12.55	16300	4.2	699	3.95	488	3.7	323	3.0	63	2.4	16	2.3	12	3.0	63
11,	4.7	1320	5.25	2250	8.25	7690	9.65	10300	11.85	14700	4.18	681	3.8	384	3.65	296	2.98	60	2.4	16	2.4	16	3.0	63
12,	8.8	8720	5.75	3120	6.7	4820	11.25	13400	8.55	8250	4.12	625	3.6	268	3.65	296	2.92	53	2.45	18	2.4	16	3.25	118
13,	14.1	19800	9.1	9290	6.15	3830	8.85	8820	6.3	4100	4.1	607	3.65	296	3.6	268	2.9	50	2.55	22	2.4	16	3.65	296
14,	10.2	11400	10.65	12200	5.75	3120	6.6	4640	5.8	3210	3.95	488	3.95	488	3.6	268	2.9	50	2.55	22	2.4	16	3.75	354
15,	7.0	5370	13.25	17900	5.6	2850	5.85	3290	5.75	3120	4.0	525	3.95	488	3.6	268	2.85	45	2.5	20	2.45	18	3.85	418
16,	6.25	4010	14.3	20300	5.5	2680	5.85	3290	5.5	2680	4.45	978	3.85	418	3.55	243	2.8	40	2.5	20	2.5	20	4.0	525
17,	5.95	3470	9.65	10300	5.5	2680	6.45	4370	5.95	3470	4.55	1110	3.85	418	3.5	218	2.8	40	2.5	20	2.5	20	3.85	418
18,	5.65	2940	6.85	5090	5.45	2590	6.7	4820	5.85	3290	4.2	699	4.1	607	3.5	218	2.7	32	2.5	20	2.5	20	3.7	323
19,	5.55	2770	6.55	4550	8.85	8820	6.3	4100	6.65	4730	4.05	566	4.45	978	3.5	218	2.7	32	2.45	18	2.5	20	3.65	296
20,	5.15	2080	7.1	5550	9.5	10000	6.8	5000	7.6	6480	3.95	488	4.5	1040	3.45	195	2.7	32	2.4	16	2.5	20	3.8	384
21,	5.0	1820	6.45	4370	7.7	6660	6.9	5190	11.55	14100	3.85	418	4.15	653	3.4	172	2.7	32	2.4	16	2.55	22	3.7	323
22,	5.2	2160	5.9	3380	6.6	4640	5.95	3470	9.05	9200	3.8	384	4.05	566	3.4	172	2.7	32	2.4	16	2.6	25	3.75	354
23,	5.82	3240	5.65	2940	5.9	3380	5.4	2510	7.25	5830	3.85	418	4.45	978	3.35	153	2.7	32	2.4	16	2.6	25	3.75	354
24,	5.85	3290	5.35	2420	5.8	3210	5.15	2080	6.25	4010	4.0	525	4.7	1320	3.3	134	2.7	32	2.4	16	2.6	25	3.7	323
25,	5.3	2330	5.2	2160	5.6	2850	5.0	1820	5.7	3030	3.95	488	5.15	2080	3.3	134	2.7	32	2.4	16	2.6	25	3.7	323
26,	5.2	2160	5.7	3030	5.4	2510	4.85	1570	5.85	3290	3.9	451	6.7	4820	3.3	134	2.7	32	2.35	14	2.7	32	3.65	296
27,	7.45	6200	6.25	4010	5.3	2330	4.75	1400	5.55	2770	3.85	418	7.45	6200	3.3	134	2.7	32	2.3	12	2.7	32	3.6	268
28,	7.95	7130	5.9	3380	5.15	2080	4.7	1320	5.15	2080	3.8	384	6.3	4100	3.2	103	2.7	32	2.3	12	2.7	32	3.6	268
29,	6.9	5190	5.6	2850	5.6	2850	4.55	2770	4.8	1480	3.75	354	5.55	2770	3.2	103	2.65	28	2.35	14	2.7	32	3.55	243
30,	6.0	3560			7.75	6760	4.5	1040	4.55	1110	3.7	323	5.1	1990	3.15	92	2.6	25	2.4	16	2.7	32	3.55	243
31,	5.5	2680			9.2	9480			6.6	4640			4.85	1570	3.1	80			2.4	16			3.65	296

Relation of gage heights to discharge not affected by ice during 1908.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF TYGART RIVER AT FETTERMAN, WEST VIRGINIA.

1909.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.8	384	4.8	*750	5.85	3290	5.8	3210	7.65	6570	4.0	525	4.45	978	5.65	2940	3.5	218	3.8	384	4.3	802	4.3	802
2,	4.2	699	4.65	*670	5.65	2940	5.65	2940	9.65	10300	3.9	451	4.3	802	4.8	1480	3.5	218	3.8	384	4.25	750	4.25	750
3,	4.35	859	4.55	*600	6.15	3830	5.8	3210	8.7	8530	4.05	566	4.15	653	4.65	1250	3.55	243	3.75	354	4.15	653	4.15	653
4,	4.4	910	4.45	*750	8.0	7220	5.85	3290	6.9	5190	4.05	566	4.05	566	4.5	1040	3.65	296	3.65	296	4.1	607	4.1	607
5,	4.45	978	4.5	*900	7.25	5830	6.7	4820	6.15	3830	4.6	1180	3.9	451	4.1	607	3.7	323	3.6	268	4.1	607	4.1	607
6,	4.4	916	5.05	1900	6.5	4460	7.0	5370	5.75	3020	6.05	3650	3.75	354	3.9	451	3.55	243	3.5	218	4.05	566	4.05	566
7,	4.2	699	5.65	2940	6.5	4460	6.55	4550	5.55	2770	5.1	1990	3.65	296	3.8	384	3.5	218	3.5	218	4.0	525	4.05	566
8,	4.45	978	5.7	3030	7.4	6110	5.8	3210	5.2	2160	5.15	2080	3.5	218	3.7	323	3.5	218	3.4	172	3.9	451	4.15	653
9,	4.6	1180	5.65	2940	7.3	5920	5.5	2680	4.85	1570	7.15	5650	3.45	195	3.65	296	3.5	218	3.4	172	3.9	451	4.1	607
10,	4.35	859	7.45	6200	6.85	5090	5.35	2420	4.8	1480	6.55	4550	3.4	172	3.6	268	4.75	1400	3.4	172	5.65	2940	3.95	488
11,	4.4	916	8.65	8440	6.65	4730	5.05	1900	4.95	1740	8.95	9000	3.4	172	3.5	218	5.45	2590	3.4	172	8.0	7220	3.9	451
12,	4.6	1180	6.8	5000	6.1	3740	4.85	1570	4.9	1650	6.8	5000	3.45	195	3.5	218	4.8	1480	3.8	384	6.2	3920	4.1	607
13,	4.55	1110	6.2	3920	5.65	2940	4.8	1480	4.85	1570	5.95	3470	3.6	268	3.45	195	4.45	978	4.4	916	5.5	2680	4.2	699
14,	4.5	1040	5.95	3470	5.6	2850	9.3	9670	4.8	1480	5.4	2510	3.55	243	3.35	153	4.1	607	4.35	859	5.15	2080	5.15	2080
15,	7.7	6660	5.95	3470	5.8	3210	11.5	14000	4.7	1320	5.75	3120	3.45	195	3.35	153	3.95	488	4.3	802	4.9	1650	5.85	3290
16,	9.6	10200	9.3	9670	5.7	3030	7.8	6850	4.55	1110	5.8	3210	3.55	243	3.6	268	3.85	418	4.1	607	4.65	1250	5.75	3120
17,	8.9	8910	8.7	8530	5.45	2590	6.45	4370	4.45	978	5.25	2250	3.7	323	4.3	802	6.55	4550	3.9	451	4.5	1040	5.15	2080
18,	7.6	6480	7.35	6010	5.25	2250	5.65	2940	4.2	699	9.85	10700	3.65	296	5.05	1900	4.75	1400	4.15	653	4.4	916	4.85	1570
19,	5.9	3380	6.6	4640	4.95	1740	5.4	2510	3.95	488	7.3	5920	3.6	268	4.7	1320	4.5	1040	4.15	653	4.4	916	4.6	1180
20,	5.65	2940	6.2	3920	4.9	1650	6.1	3740	4.0	525	5.85	3290	3.45	195	4.3	802	4.25	750	4.85	1570	4.25	750	4.45	978
21,	5.45	2590	5.95	3470	4.85	1570	8.2	7590	4.05	566	5.2	2160	3.4	172	4.2	699	3.9	451	5.1	1990	4.15	653	4.25	446
22,	5.3	2330	6.45	4370	4.7	1320	11.45	13900	4.15	653	4.65	1250	3.35	153	4.6	1180	3.8	384	4.95	1740	4.05	566	4.2	446
23,	5.15	2080	6.55	4550	4.65	1250	11.05	13000	4.2	699	4.5	1040	3.3	134	4.3	802	3.7	323	5.8	3210	4.0	525	4.2	446
24,	5.3	2330	8.5	8160	4.45	978	9.25	9580	4.2	699	4.35	859	3.3	134	4.1	607	3.9	451	12.75	16700	4.3	802	4.15	446
25,	5.35	2420	10.05	11100	4.55	1110	8.3	7780	4.15	653	4.25	750	3.55	243	3.9	451	4.7	1320	11.2	13300	4.7	1320	4.1	446
26,	4.8	1480	7.75	6760	4.75	1400	7.6	6480	4.0	525	4.15	653	3.9	451	3.75	354	4.6	1180	7.85	6940	4.7	1320	------	446
27,	4.65	1250	6.7	4820	5.6	2850	6.4	4280	4.1	607	4.1	607	4.15	653	3.65	296	4.2	699	6.3	4100	4.55	1110	------	446
28,	4.5	1040	6.15	3830	6.2	3920	6.05	3650	4.5	1040	4.9	1650	3.9	451	3.5	218	4.1	607	5.3	2330	4.4	916	------	446
29,	4.55	*950	------	------	6.6	4640	5.75	3120	4.35	859	5.1	1990	3.7	323	4.65	1250	3.95	488	4.9	1650	4.35	859	------	446
30,	4.65	*900	------	------	6.55	4550	6.05	3650	4.15	653	4.6	1180	4.15	653	4.25	750	3.9	451	4.65	1250	4.3	802	------	446
31,	4.8	*820	------	------	6.4	4280	------	------	4.05	566	------	------	6.2	3920	3.55	243	------	------	4.55	1110	------	------	3.5	446

*Ice conditions—discharge estimated.
Ice estimates made on basis of climatological data comparison with run-off in adjacent areas. and observers notes.
Ice conditions Dec. 15 to 31. Frozen over Dec. 22. Thickness of ice Dec. 31—0.3 foot.
Discharge estimated Dec. 21-31.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF TYGART RIVER AT FETTERMAN, WEST VIRGINIA.

1910. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	500	5.6	2850	5.75	3120	3.95	488	4.7	1320	4.7	1320	4.30	802	4.35	859	3.1	80	3.55	243	3.7	323	5.2	2160
2,	5.9	2500	5.2	2160	6.1	3740	3.9	451	4.55	1110	5.05	1900	4.1	607	3.95	488	3.25	118	3.6	268	3.8	384	4.7	1320
3,	13.4	18200	6.1	3740	5.95	3470	3.9	451	4.45	978	5.7	3030	4.3	802	3.7	323	3.35	153	3.45	195	3.7	323	4.45	978
4,	13.25	17900	6.7	4820	5.65	2940	3.9	451	4.4	916	6.05	3650	4.6	1180	3.55	243	3.6	268	3.4	172	3.7	323	4.35	859
5,	9.3	9670	6.35	4190	5.4	2510	4.05	566	4.3	802	5.65	2940	4.85	1570	3.45	195	3.55	243	3.45	195	3.7	323	4.3	802
6,	7.15	5650	6.2	3500	5.15	2080	4.15	653	4.3	802	8.5	8160	4.75	1400	3.45	195	3.55	243	3.3	134	3.7	323	4.35	750
7,	12.95	17200	6.15	2800	5.05	1910	4.1	607	4.25	750	9.2	9480	4.65	1250	3.45	195	3.95	488	3.2	103	3.7	323	4.35	700
8,	10.25	11500	5.95	2200	4.95	1740	4.1	607	4.2	699	6.85	5090	5.3	2330	3.45	195	4.0	525	3.3	134	3.7	323	4.3	600
9,	7.8	6850	5.6	1800	4.75	1400	4.1	607	4.4	916	6.2	3920	4.95	1740	3.45	195	3.9	451	3.15	92	3.7	323	4.3	500
10,	6.4	4280	5.95	2200	4.65	1250	4.05	566	4.8	1480	5.75	3120	4.6	1180	3.45	195	3.7	323	3.1	80	3.6	268	4.3	450
11,	5.45	2590	6.65	1800	4.55	1110	4.0	525	4.95	1740	5.9	3380	4.4	916	3.4	172	3.65	296	3.1	80	3.65	296	4.3	400
12,	5.05	1900	7.15	1600	4.5	1040	4.0	525	6.25	4010	6.05	3650	4.3	802	3.2	103	3.6	268	3.1	80	3.7	323	------	350
13,	5.0	1820	8.05	1400	4.45	978	4.0	525	8.9	8910	6.5	4460	4.35	859	3.15	92	3.65	296	3.1	80	3.7	323	------	350
14,	7.35	6010	8.3	1500	4.4	916	4.0	525	7.15	5650	6.35	4190	5.25	2250	3.1	80	4.4	916	3.05	72	3.6	268	------	300
15,	8.25	7690	8.15	1800	4.35	859	4.2	699	5.9	3380	6.0	3560	5.45	2590	3.05	72	4.15	653	3.05	72	3.5	218	------	300
16,	7.0	5370	7.8	4000	4.25	750	4.25	750	5.35	2420	8.6	8340	5.0	1820	3.25	118	4.1	607	3.15	92	3.5	218	------	300
17,	6.1	3740	9.7	10400	4.2	699	4.2	699	5.0	1820	14.5	20800	4.7	1320	3.2	103	3.9	451	3.1	80	3.5	218	4.1	250
18,	9.3	9670	9.45	9960	4.2	699	4.35	859	4.85	1570	11.35	13700	4.55	1110	3.1	80	3.75	354	3.1	80	3.45	195	------	250
19,	13.8	19100	8.25	7690	4.15	653	4.35	859	4.7	1320	11.65	14300	4.4	916	3.0	63	3.65	296	3.1	80	3.4	172	------	300
20,	10.05	11100	7.4	6110	4.1	607	4.45	978	4.6	1180	12.7	16600	4.35	859	2.9	50	3.55	243	3.1	80	3.4	172	------	300
21,	8.9	8910	6.65	4730	4.1	607	4.65	1250	4.55	1110	8.25	7690	4.3	802	2.95	56	3.5	218	3.0	63	3.4	172	------	300
22,	9.95	10900	8.9	8910	4.1	607	4.95	1740	4.5	1040	6.65	4730	4.1	607	2.9	50	3.45	195	3.0	63	3.4	172	------	300
23,	7.8	6850	10.15	11300	4.15	653	5.55	2770	4.4	916	6.2	3920	3.9	451	2.9	50	3.4	172	3.0	63	3.4	172	4.4	300
24,	6.5	4460	7.6	6480	4.1	607	5.85	3290	4.35	859	5.7	3030	3.8	384	2.85	45	3.4	172	3.0	63	3.4	172	6.0	1800
25,	5.85	3290	6.4	4280	4.05	566	6.9	5190	4.75	1400	5.25	2250	3.6	268	3.0	63	3.3	134	3.0	63	3.4	172	8.8	8720
26,	5.55	2770	5.75	3120	4.0	525	6.5	4460	5.55	2770	4.9	1650	3.5	218	3.3	134	3.4	172	3.0	63	3.45	195	7.55	6380
27,	7.75	6760	5.4	2510	4.0	525	5.9	3380	5.5	2680	4.7	1320	3.45	195	3.15	92	3.2	103	3.05	72	3.5	218	6.9	5190
28,	9.0	9100	5.4	2510	4.0	525	5.55	2770	5.15	2080	4.5	1040	3.4	172	3.1	80	3.15	92	3.1	80	4.4	916	6.2	3920
29,	7.4	6110	------	------	4.0	525	5.2	2160	4.9	1650	4.35	859	3.35	153	3.05	72	3.05	72	3.1	80	5.9	3380	5.7	3030
30,	6.5	4460	------	------	4.0	525	4.9	1650	4.8	1480	4.3	802	3.5	218	3.0	63	3.3	134	3.2	103	5.7	3030	7.75	6700
31,	5.95	3470	------	------	4.0	525	------	---	4.6	1180	------	------	4.15	653	3.0	63	------	------	3.5	218	------	------	9.15	9380

Ice conditions Jan. 1 and 2, Feb. 6-16 and Dec. 6-24, 1910, discharge estimated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF TYGART RIVER AT FETTERMAN, WEST VIRGINIA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	7.1	5550	9.5	10100	5.6	2850	6.65	4730	4.85	1570	3.5	218	3.85	420	3.0	63	9.25	9580	6.05	3650	4.20	699	5.36	2440
2,	7.35	6010	7.0	5370	5.35	2420	6.4	4280	4.75	1400	3.5	218	3.75	350	3.0	63	7.0	5370	9.05	9200	4.05	570	5.15	2080
3,	8.55	8250	6.5	4460	5.25	2250	6.1	3740	4.55	1110	3.5	218	3.7	323	3.0	63	5.0	1820	11.65	14300	4.00	525	4.96	1750
4,	8.75	8630	6.25	4010	5.1	1990	7.85	6940	4.5	1040	3.5	218	3.65	300	3.0	63	4.8	1480	7.60	6480	3.95	490	4.85	1570
5,	7.2	5740	5.95	3370	4.85	1570	11.6	14200	4.35	860	3.45	190	3.5	218	3.0	63	4.35	860	6.55	4550	3.90	451	4.70	1320
6,	6.15	3830	5.45	2590	4.75	1400	9.75	10500	4.3	800	3.4	172	3.45	200	2.95	60	4.15	650	5.95	3470	4.00	525	4.56	1120
7,	5.4	2510	5.5	2680	6.75	4910	8.05	7310	4.3	800	4.2	699	3.5	218	2.9	50	4.1	607	9.45	9960	6.55	4550	4.50	1040
8,	5.15	2080	5.5	2680	7.6	6480	7.7	6660	4.25	750	4.05	570	3.9	451	3.35	150	4.05	570	14.70	21200	7.05	5460	4.40	916
9,	5.4	2510	5.7	3030	7.45	6380	8.75	8630	4.15	650	3.95	490	3.6	268	3.5	218	4.0	525	10.30	11600	5.85	3290	4.37	880
10,	4.85	1570	6.0	3560	7.1	5550	8.8	8720	4.1	607	4.15	650	3.95	490	3.4	172	4.0	525	8.00	7220	5.32	2370	4.36	870
11,	4.7	1320	5.7	3030	6.85	5090	7.8	6850	4.05	570	3.9	451	3.9	451	3.35	150	4.25	750	7.40	6107	5.10	1990	4.44	970
12,	4.85	1570	5.35	2420	6.65	4720	6.65	4720	4.0	525	4.05	570	3.75	350	3.25	120	4.7	1320	7.80	6850	4.75	1400	4.50	1040
13,	11.5	14000	5.15	2080	6.3	4100	5.65	2940	3.9	451	3.95	490	3.9	451	3.2	103	5.8	3210	6.90	5190	5.01	1840	4.51	1050
14,	14.8	21400	4.95	1740	6.3	4100	5.45	2590	3.9	451	4.35	860	3.95	490	3.2	103	5.4	2510	5.85	3290	4.98	1790	4.70	1320
15,	10.5	11950	4.9	1650	6.5	4460	7.65	6570	3.85	420	4.65	1250	3.75	350	3.2	103	5.95	3470	6.05	3650	4.90	1650	5.40	2510
16,	10.75	12400	4.85	1570	6.3	4100	7.7	6660	3.75	350	4.6	1180	3.55	240	3.2	103	14.55	21900	7.05	5460	4.80	1480	7.40	6110
17,	8.15	7500	4.55	1110	5.85	3290	6.55	4550	3.65	300	4.3	802	3.45	200	3.2	103	15.05	22000	7.70	6660	4.80	1480	8.18	7550
18,	6.45	4370	4.45	980	5.65	2940	5.85	3290	3.55	240	5.5	2680	3.4	172	3.15	90	9.2	9480	11.10	13100	6.00	3560	6.92	5220
19,	5.55	2770	4.3	802	6.3	4100	5.55	2770	3.5	218	6.5	4460	3.35	150	3.1	80	6.5	4460	10.70	12300	6.58	4600	6.02	3600
20,	5.3	2330	5.5	2680	7.4	6110	5.65	2940	3.45	200	5.9	3380	3.3	134	3.1	80	5.5	2680	7.85	6940	6.28	4060	5.32	2370
21,	5.2	2160	6.1	3740	7.2	5740	6.8	5000	3.75	350	5.5	2680	3.25	120	3.05	70	5.2	2160	6.25	4010	5.71	3050	5.15	2080
22,	6.15	3830	5.85	3290	6.75	4910	7.4	6110	3.95	490	4.75	1400	3.2	103	3.0	63	5.9	3380	5.45	2590	5.31	2350	5.02	1850
23,	7.65	6570	5.25	2250	6.2	3920	7.85	6940	3.85	420	4.25	750	3.2	103	3.0	63	6.0	3560	5.10	1990	5.02	1850	5.20	2162
24,	6.95	5280	5.2	2160	5.7	3030	7.5	6290	3.65	300	4.15	650	3.2	103	2.95	60	5.25	2250	4.95	1740	4.91	1670	5.78	3170
25,	6.1	3740	5.2	2160	5.3	2330	6.9	5190	3.55	240	4.1	607	3.3	134	2.9	50	4.95	1740	5.05	1900	5.26	2270	6.26	4020
26,	6.15	3830	5.25	2250	5.15	2080	6.15	3830	3.5	218	4.75	1400	3.3	134	3.0	63	4.85	1570	4.90	1650	5.48	2650	6.18	3880
27,	11.4	13800	5.4	2510	5.05	1910	5.7	3030	3.5	218	5.0	1820	3.25	120	3.15	90	4.7	1320	4.75	1400	5.45	2590	9.98	11000
28,	10.7	12300	5.65	2940	4.95	1740	5.3	2330	3.6	268	4.95	1740	3.15	90	3.35	150	4.55	1110	4.60	1180	5.40	2510	8.46	8080
29,	10.3	11600	------	------	4.95	1740	5.1	1990	3.6	268	4.5	1040	3.05	70	5.15	2080	5.35	2420	4.55	1110	5.48	2650	7.41	6130
30,	20.35	35000	------	------	5.2	2160	4.9	1650	3.55	240	4.1	607	3.0	63	6.65	4720	5.3	2330	4.35	860	5.52	2720	6.16	3850
31,	15.95	24200	------	------	6.4	4280	------	------	3.5	218	------	------	3.0	63	10.1	11200	------	------	4.30	802	------	------	6.68	4780

ESTIMATED MONTHLY DISCHARGE OF TYGART RIVER, AT FETTERMAN, W. VA.

(Drainage area 1,340 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1907.					
June,	18000	750	4370	3.26	3.40
July,	33600	978	5690	4.25	4.90
August,	13300	451	2100	1.57	1.81
September,			999	.746	.83
October,	8440	384	2110	1.57	1.81
November,	9000	1180	3940	2.94	3.28
December,	14600	699	4010	2.99	3.45
1908.					
January,	19800	1250	3860	2.88	3.32
February,	20300	2160	5660	4.22	4.55
March,	18100	2080	6210	4.63	5.34
April,	13400	1040	5040	3.76	4.20
May,	18300	1110	6700	5.00	5.76
June,	2850	323	932	0.70	0.78
July	6200	218	1200	.896	1.03
August,	859	80	248	.185	.21
September,	118	25	56	0.42	.05
October,	25	12	18	.013	.01
November,	32	12	20	.015	.02
December,	525	32	225	.168	.19
The year,	20300	12	2514	1.907	25.46
1909.					
January,	10200	384	2240	1.67	1.92
February,	11100	*600	4460	3.33	3.47
March,	7220	978	3410	2.54	2.93
April,	14000	488	5260	3.93	4.38
May,	10300	488	2080	1.55	1.79
June,	9000	451	2730	2.04	2.28
July,	3920	134	464	.346	.40
August,	2940	153	707	.528	.61
September,	4550	218	808	.603	.67
October,	16700	172	2070	1.54	1.78
November,	7220	451	1320	.985	1.10
December,	3290		880	.657	.76
The year,	16700		2202	1.643	22.09

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*Minimum discharge Feb. estimated.

ESTIMATED MONTHLY DISCHARGE OF TYGART RIVER, AT FETTERMAN, W. VA.

(Drainage area 1,340 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
†1910.					
January,	18200	‡500	7430	5.54	6.39
February,	11300	----------	4300	3.21	3.34
March,	3740	525	1250	.933	1.08
April,	5190	451	1370	1.02	1.14
May,	8910	802	1900	1.42	1.64
June,	20800	802	5430	4.05	4.52
July,	2590	153	981	.732	.84
August,	859	45	154	.115	.13
September,	916	72	291	.217	.24
October,	268	63	108	.081	.09
November,	3380	172	475	.354	.40
December,	9380	----------	1820	1.36	1.57
The year,	20800	45	2110	1.57	21.38
1911.					
January,	35000	1320	8019	5.984	6.899
February,	10100	802	2900	2.164	2.253
March,	6480	1400	3634	2.712	3.126
April,	14200	1650	5398	4.028	4.494
May,	1570	200	534	.399	.46
June,	4460	172	1082	.807	.901
July,	490	63	236	.176	.203
August,	11200	50	665	.496	.572
September,	22000	525	3854	2.875	3,208
October,	21200	802	5820	4.343	5.007
November,	5460	490	2236	1.668	1.861
December,	11000	870	3120	2.338	2.696
The year,	35000	50	3125	2.332	31.266

†Daily discharge Jan. 1 and 2, February 6 to 15 and December 6 to 24, estimated because of ice, on basis of climatologic records, discharge of adjacent drainage areas and gage observers notes.

Mean discharge February 6 to 16 estimated about 2,240 second-feet.

Mean discharge December 6 to 24 estimated about 463 second-feet.

‡Estimated.

WEST FORK RIVER.

Description of Basin.

The West Fork river rises in the western part of Upshur county, W. Va., and flows northwestward into Lewis county, thence flowing in a slight northeasterly direction to its junction with the Tygart river near Fairmount, W. Va.

Its length is approximately seventy miles and its drainage area, above the mouth, is about 845 square miles. The elevation of the hills at the source is about 1,500 feet, while at its mouth the elevation is about 860 feet. It flows through a broad valley, the bordering hills being steep and precipitous and slightly forested. There are no lakes, ponds or swamps on the drainage area. There are numerous tributaries, the largest of which are Ten Mile creek, Simpson creek and Stone Coal Creek. Its watershed is underlain by very valuable and extensive coal beds and contains oil and gas in abundance. There are several large towns in the drainage basin, the most important of which are Clarksburg and Weston.

Little water-power has been developed, although the main stream and its tributaries afford ample opportunity.

The mean annual precipitation over this watershed is between 45 and 50 inches.

The discharge has been measured since 1907, at Enterprise, W. Va., 33 miles above the mouth.

OHIO BASIN—STATION NO. 25.

WEST FORK RIVER AT ENTERPRISE, W. VA.

DESCRIPTION OF STATION.

This station was established on June 2, 1907, by the United States Geological Survey, who has maintained and operated it since that date, and is located at the steel highway bridge at Enterprise, Harrison Co., W. Va., about 3-4 mile above the mouth of Bingaman creek, and about 12 miles above the mouth.

The channel is broken by one pier; the bed being smooth rock and permanent. Both banks are high and not subject to overflow.

Discharge measurements are made from the downstream side of the bridge at ordinary stages, and by wading at a point 200 feet above the bridge at low stages.

A standard chain gage is attached to the bridge. The length of chain from the bottom of the weight to marker is 36.21 feet. Elevation of zero is arbitrary datum. Bench mark No. 1 is the northeast corner of the left abutment, downstream side of bridge; elevation 33.70 feet above gage datum. Bench mark No. 2 is a scratch on west side of third vertical member, downstream side of bridge, about 0.44 feet above top of handrail; elevation 39.80 feet above gage datum.

A small dam is located at Worthington, W. Va., about 3 miles below the station, but back-water does not reach to the section.

Ice may affect the relation of gage height to discharge for two or three weeks at a time, during December, January and February. During the summer of 1908 the only water running in the river was the pumpage from the numerous coal mines along the stream.

Since the establishment of this station, 18 discharge measurements have been made.

The following data have been furnished by the United States Geological Survey:

DISCHARGE MEASUREMENTS OF WEST FORK RIVER, AT ENTERPRISE, W. VIRGINIA.

(Drainage area 750 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1907.							
1	June 2,	Horton,	171	825	2.74	4.94	2,260	
2	June 8,	do	156	558	1.81	3.44	1,010	
3	Aug. 10,	Horton & Padgett,	161	718	2.23	4.20	1,600	
4	Sept. 13,	Horton,	157	500	1.23	3.04	617	
	1909.							
5	May 18,	Horton,	153	292	0.44	1.68	128	
6	Dec. 6,	Parker,	151	240	0.25	1.40	60	
	1910.							
7	Feb. 18,	Bailey,	168	1,060	3.63	6.35	3,850	0.6 msmt.
8	Feb. 19,	do	164	808	2.77	4.90	2,240	0.6 msmt.
9	Feb. 19,	do	164	794	2.51	4.83	1,990	Surface msmt.
10	Feb. 22,	do	205	1,360	4.21	7.92	5,720	0.6 msmt.
11	Feb. 22,	do	207	1,570	4.57	8.90	7,170	Surface msmt.
12	Aug. 17,	do	67	48	0.23	0.65	11	0.6 msmt.
13	Oct. 8,	do	52	37	0.60	0.80	22	Surface msmt.
14	Oct. 10,	Drake,	43	26	0.66	0.78	17	
	1911.		207	1,360	3.62	7.67	4,920	
15	Jan. 15,	Bailey,	158	647	2.04	3.91	1,320	
16	Jan. 18,	do						
17	Feb. 2,	do	160	713	2.45	4.52	1,750	
18	Oct. 28,	Perwien,	156	390	0.85	2.26	333	

DISCHARGE TABLE FOR WEST FORK RIVER, AT ENTERPRISE, W. VA., FROM JUNE 2, 1907, TO DEC. 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
0.10	1	.70	540	.20	2362	.70	4900	.20	7914
.20	2	.80	593	.30	2456	.80	5070	.30	8036
.30	4	.90	649	.40	2552	.90	5180	.40	8158
.40	6	3.00	707	.50	2650	8.00	5290	.50	8280
.50	9	.10	767	.60	2750	.10	5400	.60	8404
.60	12	.20	829	.70	2850	.20	5510	.70	8528
.70	16	.30	893	.80	2950	.30	5625	.80	8652
.80	20	.40	959	.90	3050	.40	5740	.90	8776
.90	25	.50	1026	6.00	3150	.50	5855	11.00	8900
1.00	30	.60	1094	.10	3252	.60	5970	.10	9025
.10	36	.70	1163	.20	3356	.70	6085	.20	9150
.20	43	.80	1233	.30	3460	.80	6200	.30	9275
.30	52	.90	1304	.40	3564	.90	6320	.40	9400
.40	64	4.00	1377	.50	3670	9.00	6460	.50	9525
.50	79	.10	1451	.60	3776	.10	6580	.60	9650
.60	99	.20	1526	.70	3882	.20	6700	.70	9775
.70	124	.30	1602	.80	3988	.30	6820	.80	9900
.80	155	.40	1680	.90	4094	.40	6940	.90	10025
.90	190	.50	1759	7.00	4200	.50	7060	12.00	10150
2.00	227	.60	1840	.10	4308	.60	7182	13.00	11450
.10	266	.70	1922	.20	4416	.70	7304	14.00	12750
.20	307	.80	2006	.30	4524	.80	7426	15.00	14100
.30	350	.90	2092	.40	4632	.90	7548	16.00	15450
.40	395	5.00	2180	.50	4740	10.00	7670	17.00	16850
.50	441	.10	2270	.60	4850	.10	7792		
.60	489								

Note:—Rating curve fairly well defined below gage height 2.9 ft., well defined between 3.0 and 5.0 ft., fairly well defined between 5.1 and 9.0 ft., and is an extension above 9.0 ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST FORK RIVER, AT ENTERPRISE, W. VA.

1907.	JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1.	-----	-----	1.6	99	2.1	266	2.0	227	2.0	227	3.6	1090	2.6	489
2.	4.9	2090	3.0	707	2.0	227	1.9	190	2.0	227	8.4	5740	2.4	395
3,	4.8	2010	3.9	1300	2.0	227	1.8	155	2.1	266	6.3	3460	2.3	350
4,	3.8	1230	3.6	1090	1.9	190	2.7	540	2.2	307	5.5	2650	2.2	307
5,	3.2	829	3.1	767	1.9	190	2.5	441	4.7	1920	5.0	2180	2.1	266
6,	3.6	1090	2.0	227	1.9	190	2.3	350	4.0	1380	4.6	1840	2.0	227
7,	3.5	1030	3.5	1030	2.3	350	2.0	227	3.5	1030	4.2	1530	2.0	227
8,	3.2	829	3.5	1030	2.2	307	1.9	190	4.3	1600	4.0	1380	1.9	190
9,	4.8	2010	8.4	5740	2.0	227	1.8	155	3.6	1090	3.7	1160	2.1	266
10,	4.5	1760	5.0	2180	4.2	1530	1.7	124	3.2	829	3.5	1030	2.6	489
11,	3.3	893	9.6	7180	3.6	1090	4.5	1760	3.0	707	3.1	767	9.7	7300
12,	2.9	649	7.5	4740	2.9	649	6.5	3670	2.8	593	2.8	593	7.5	4740
13,	5.1	2270	4.8	2010	2.5	441	4.5	1760	2.6	489	2.4	395	6.0	3150
14,	9.4	6940	3.2	829	2.1	266	3.0	707	2.3	350	2.3	350	8.5	5860
15,	6.4	3560	3.0	707	2.0	227	2.8	593	2.1	266	2.2	307	9.0	6460
16,	4.5	1760	2.9	649	2.0	227	2.5	441	2.1	266	2.2	307	7.0	4200
17,	3.5	1030	2.5	441	1.9	190	2.1	266	2.0	227	2.1	226	6.3	3460
18,	2.9	649	9.5	7060	1.8	155	2.0	227	1.9	190	2.4	395	5.1	2270
19,	2.6	489	8.5	5860	2.0	227	3.0	707	1.9	190	3.6	1090	4.0	1380
20,	2.4	395	4.9	2090	2.3	350	3.1	767	1.8	155	3.5	1030	3.8	1230
21,	2.3	350	4.2	1530	2.1	266	2.6	489	1.8	155	3.3	893	3.5	1030
22,	2.2	307	3.1	767	2.0	227	2.4	395	1.7	124	3.0	707	3.0	707
23,	2.0	227	4.6	1840	3.0	707	2.2	307	1.6	99	2.8	593	2.8	593
24,	1.8	155	3.8	1230	8.2	5510	2.1	266	1.5	79	10.5	8280	4.8	2010
25,	1.6	99	3.5	1030	6.8	3990	2.0	227	1.4	64	8.5	5860	4.0	1380
26,	1.7	124	3.8	1230	5.6	2750	2.0	227	1.4	64	5.4	2550	3.8	1230
27,	1.7	124	3.1	767	4.2	1530	2.0	227	1.5	79	4.5	1760	3.5	1030
28,	1.7	124	2.7	540	3.5	1030	1.8	155	3.6	1090	3.2	829	3.1	767
29,	1.8	155	2.3	350	2.6	489	1.9	190	5.4	2550	3.0	707	2.9	649
30,	1.6	99	2.2	307	2.4	395	2.0	227	4.5	1760	2.7	540	3.0	707
31,	-----	-----	2.0	227	2.1	266	-----	-----	3.3	893	-----	-----	2.6	489

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST FORK RIVER AT ENTERPRISE, WEST VIRGINIA.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.4	395	3.8	1230	9.0	6460	8.7	6080	2.0	227	2.4	395	1.6	99	1.9	190	1.0	30	0.8	20	0.8	20	0.8	20
2,	2.3	350	3.6	1090	14.0	12800	10.4	8160	3.0	707	2.2	307	1.4	64	1.8	155	0.9	25	0.7	16	0.8	20	0.8	20
3,	2.2	307	3.4	959	8.0	5290	8.0	5290	2.6	489	2.0	227	1.3	52	2.5	441	0.8	20	0.8	20	0.8	20	0.8	20
4,	2.0	227	3.3	893	6.5	3670	6.4	3560	5.0	2180	1.9	190	1.2	43	2.0	227	0.7	16	0.8	20	0.8	20	0.8	20
5,	3.0	707	15.0	14100	5.0	2180	4.4	1680	16.4	16000	1.8	155	1.1	36	1.6	99	0.8	20	0.8	20	0.8	20	0.8	20
6,	2.8	593	7.7	4960	6.0	3150	3.5	1030	11.4	9400	1.7	124	1.1	36	2.6	489	0.8	20	0.9	25	0.8	20	0.8	20
7,	2.7	540	5.5	2650	5.4	2550	3.4	959	10.5	8280	1.6	99	1.1	36	2.1	266	0.8	20	0.8	20	0.8	20	0.8	20
8,	2.6	489	4.6	1840	5.0	2180	3.2	829	8.2	5510	1.5	79	1.8	155	2.0	227	0.8	20	0.8	20	0.8	20	0.8	20
9,	4.2	1530	4.2	1530	13.5	12100	6.8	3990	10.0	7670	1.5	79	1.6	99	1.9	190	0.7	16	0.8	20	0.8	20	1.3	52
10,	4.0	1380	4.0	1380	9.6	7180	6.3	3460	9.5	7060	1.4	64	1.4	64	1.8	155	0.6	12	0.7	16	0.8	20	1.1	36
11,	4.2	1530	3.7	1160	6.3	3460	6.5	3670	7.1	4310	1.3	52	1.3	52	1.6	99	0.9	25	0.8	20	0.8	20	1.0	30
12,	4.6	1840	3.3	893	4.7	1920	5.5	2650	5.2	2360	1.2	43	1.2	43	1.4	64	0.8	20	0.8	20	0.8	20	1.0	30
13,	9.9	7550	3.1	767	4.1	1450	4.5	1760	4.0	1380	1.0	30	1.1	36	1.3	52	0.7	16	0.8	20	0.8	20	1.1	36
14,	7.6	4850	3.0	707	3.7	1160	4.0	1380	3.2	829	1.0	30	1.6	99	1.3	52	0.6	12	0.8	20	0.8	20	1.0	30
15,	5.2	2360	8.3	5620	3.5	1030	3.7	1160	3.1	767	3.1	767	1.4	64	1.2	43	0.7	16	0.8	20	0.8	20	1.2	43
16,	4.8	2010	8.0	5290	3.3	893	3.3	893	2.8	593	2.6	489	1.5	79	1.1	36	0.7	16	0.8	20	0.8	20	1.1	36
17,	4.5	1760	6.4	3560	3.1	767	3.2	829	3.2	829	2.2	307	1.3	52	1.3	52	0.9	25	0.8	20	0.8	20	1.0	30
18,	4.1	1450	4.3	1600	3.0	707	3.2	829	3.9	1300	2.0	227	2.8	593	1.1	36	0.9	25	0.8	20	0.8	20	0.9	25
19,	3.8	1230	4.0	1380	11.8	9900	3.0	707	5.3	2460	1.9	190	2.0	227	1.0	30	0.9	25	0.8	20	0.8	20	1.2	43
20,	3.4	959	6.1	3250	7.6	4850	2.9	649	5.1	2270	1.7	124	2.9	649	1.0	30	0.8	20	0.8	20	0.8	20	1.1	36
21,	3.1	767	5.0	2180	5.1	2270	3.1	767	10.6	8400	1.5	79	2.2	307	0.9	25	0.8	20	0.8	20	0.8	20	1.1	36
22,	3.0	707	4.5	1760	4.5	1760	2.7	540	5.6	2750	1.4	64	2.0	227	1.0	30	0.9	25	0.8	20	0.8	20	1.2	43
23,	2.9	649	4.0	1380	3.9	1300	2.5	441	4.7	1920	1.3	52	1.8	155	1.1	36	0.8	20	0.9	25	0.8	20	1.1	36
24,	2.8	593	3.8	1230	3.4	959	2.4	395	4.0	1380	1.2	43	1.5	79	1.0	30	0.7	16	0.9	25	0.8	20	1.1	36
25,	2.8	593	3.6	1090	3.1	767	2.3	350	3.7	1160	1.3	52	1.4	64	0.9	25	0.6	12	0.9	25	0.8	20	1.0	30
26,	3.5	1030	5.7	2850	3.4	959	2.2	307	3.6	1090	1.2	43	1.6	99	0.9	25	0.8	20	0.9	25	0.8	20	1.0	30
27,	6.7	3880	5.2	2360	3.2	829	2.2	307	3.5	1030	1.1	36	2.5	441	0.8	20	0.9	25	0.9	25	0.8	20	1.6	99
28,	5.0	2180	4.8	2010	3.0	707	2.1	266	3.0	707	1.1	36	2.3	350	0.8	20	0.8	20	0.9	25	0.8	20	1.3	52
29,	4.6	1840	4.5	1760	6.5	3670	2.0	227	2.8	593	1.9	190	2.1	266	0.8	20	0.7	16	0.8	20	0.8	20	1.2	43
30,	4.2	1530	-----	-----	7.0	4200	1.9	190	2.5	441	1.7	124	2.0	227	0.8	20	0.8	20	0.8	20	0.8	20	1.1	36
31,	4.0	1380	-----	-----	7.0	4200	-----	-----	2.3	350	-----	-----	2.0	227	0.7	16	-----	-----	0.8	20	-----	-----	1.0	30

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST FORK RIVER AT ENTERPRISE, WEST VIRGINIA.

1909.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.3	52	2.9	400	4.8	2010	3.8	1230	8.9	6320	1.9	190	2.6	489	1.6	99	1.3	52	1.2	43	1.6	99	1.5	79
2,	1.1	36	2.8	380	4.4	1680	3.4	959	7.0	4200	1.8	155	2.3	350	1.5	79	1.2	43	1.2	43	1.5	79	1.5	79
3,	1.6	99	2.6	350	3.5	1030	3.0	707	5.2	2360	1.8	155	1.9	190	1.4	64	1.2	43	1.1	36	1.5	79	1.5	79
4,	1.8	155	4.8	700	3.6	1090	3.3	893	4.5	1760	1.8	155	1.3	52	1.3	52	1.2	43	1.0	30	1.5	79	1.5	79
5,	1.8	155	4.4	1200	6.2	3360	3.8	1230	3.8	1230	2.4	395	1.5	79	1.2	43	1.2	43	1.0	30	1.6	99	1.5	79
6,	1.9	190	4.0	1380	4.2	1530	3.4	959	3.2	829	2.3	350	1.5	79	1.4	64	1.1	36	0.9	25	1.5	79	1.4	64
7,	1.8	155	3.9	1300	4.0	1380	3.0	707	2.8	593	2.5	441	1.4	64	1.3	52	1.1	36	0.9	25	1.5	79	1.5	79
8,	1.7	124	3.8	1230	3.8	1230	2.7	540	2.5	441	2.4	395	1.3	52	1.2	43	1.1	36	1.0	30	1.4	64	1.6	99
9,	1.7	124	4.3	1600	3.7	1160	2.5	441	2.3	350	9.1	6580	1.2	43	1.1	36	1.1	36	0.9	25	1.4	64	1.7	124
10,	1.6	99	8.3	5620	3.5	1030	2.3	350	2.2	307	4.8	2010	1.1	36	1.0	30	1.9	190	0.9	25	1.5	79	2.0	227
11,	1.5	79	6.8	3990	4.4	1680	2.2	307	2.1	266	5.3	2460	1.1	36	0.9	25	4.3	1000	0.9	25	4.3	1600	1.8	155
12.	2.3	350	5.2	2360	3.8	1230	2.1	266	2.0	227	4.8	2010	1.0	30	0.8	20	3.2	829	1.2	43	3.3	893	6.4	3560
13,	1.8	155	4.8	2010	3.6	1090	2.1	266	1.9	190	4.5	1760	1.5	79	0.8	20	2.2	307	1.5	79	2.5	441	4.6	1840
14,	1.7	124	4.3	1600	3.4	959	6.7	3880	1.9	190	3.3	893	1.7	124	0.8	20	1.8	155	1.4	64	2.2	307	3.5	1030
15,	8.5	5860	3.9	1300	2.9	649	5.6	2750	1.7	124	4.3	1600	1.8	155	1.2	43	1.6	99	1.4	64	2.0	227	3.1	767
16,	6.4	3560	10.9	8780	2.6	489	4.4	1680	1.7	124	3.5	1030	2.0	227	2.0	227	1.5	79	1.4	64	1.9	190	2.9	649
17,	4.8	2010	8.3	5620	4.3	1600	3.3	893	1.7	124	2.8	593	1.9	190	2.5	441	1.4	64	1.4	64	1.8	155	2.8	593
18,	6.4	3560	3.8	1230	4.0	1380	3.0	707	1.6	99	7.1	4310	1.7	124	2.0	227	1.3	52	1.5	79	1.7	124	------	500
19,	4.1	1450	4.3	1600	3.7	1160	2.8	593	1.5	79	6.6	3780	1.8	155	1.9	190	1.2	43	1.4	64	1.6	99	------	300
20,	3.3	893	4.8	2010	3.2	829	3.3	893	1.5	79	5.5	2650	1.7	124	1.7	124	1.2	43	1.4	64	1.6	99	------	280
21,	2.8	593	3.8	1230	2.9	649	9.4	6940	1.9	190	3.0	707	1.5	79	3.4	959	1.2	43	1.4	64	1.5	79	------	200
22,	2.7	540	5.0	2180	4.4	1680	10.3	8040	2.6	489	2.6	489	1.4	64	2.7	540	1.1	36	1.4	64	1.5	79	------	150
23,	2.4	395	4.3	1600	3.8	1230	9.3	6820	2.2	307	2.7	540	1.3	52	2.3	350	1.1	36	1.6	99	1.5	79	------	120
24,	4.3	1600	10.0	7670	3.5	1030	7.1	4310	2.0	227	2.6	489	1.2	43	1.8	155	1.1	36	7.2	4420	1.5	79	------	110
25,	3.9	1300	7.9	5180	3.2	829	5.4	2550	1.8	155	2.6	489	1.5	79	1.6	99	1.5	79	6.4	3560	1.6	99	------	110
26,	3.4	959	5.9	3050	3.0	707	4.6	1840	1.7	124	2.5	441	1.7	124	1.4	64	1.2	43	3.8	1230	1.8	155	------	100
27,	3.0	707	4.8	2010	2.9	649	4.0	1380	2.0	227	4.2	1530	1.6	99	1.3	52	1.1	36	2.8	593	1.7	124	------	100
28,	2.8	593	5.3	2460	2.8	593	3.5	1030	2.5	441	9.3	6820	1.5	79	1.2	43	1.4	64	2.3	350	1.6	99	------	80
29,	2.8	520	------	------	4.3	1600	3.0	707	2.3	350	4.4	1680	1.4	64	1.1	36	1.2	43	2.2	307	1.6	99	------	80
30,	3.3	460	------	------	3.9	1300	2.8	593	2.2	307	3.3	893	1.6	99	1.3	52	1.3	52	1.8	155	1.6	99	------	80
31,	3.0	420	------	------	3.6	1090	------	------	2.1	266	------	------	1.7	124	1.3	52	------	------	1.8	155	------	------	------	80

Note:—Relation of gage height to discharge affected by ice January 29 to February 5 and December 18 to 31. Discharge January 29 to February 5 estimated. Discharge December 18 to 31 estimated on basis of climatologic records, discharge of adjacent drainage areas and observer's notes. Mean discharge for this period. 170 second-feet, varying from 80 to 500 second-feet.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST FORK RIVER AT ENTERPRISE, WEST VIRGINIA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,		300	3.8	1230	4.9	2090	1.5	79	1.9	190	2.2	307	1.5	79	1.4	64	1.1	36	1.1	36	2.0	227	3.3	893
2,		1000	3.3	893	4.5	1700	1.5	79	1.8	155	2.3	350	1.5	79	1.2	43	1.0	30	1.0	30	2.0	227	2.7	540
3,	9.4	6940	4.0	1380	4.1	1450	1.5	79	1.7	124	2.5	441	2.0	227	1.1	36	2.6	489	0.9	25	1.8	155	2.3	350
4,	8.8	6200	5.5	2650	3.7	1160	1.6	99	1.6	99	2.4	395	3.5	1030	1.1	36	2.4	395	0.9	25	1.7	124	2.3	350
5,	5.2	2360	5.4	2550	3.2	829	1.7	124	1.6	99	2.2	307	2.2	307	1.0	30	2.9	649	0.9	25	1.6	99	2.2	307
6,	5.0	2180	5.0	2180	3.0	707	1.6	99	1.5	79	6.0	3150	2.0	227	1.0	30	2.6	489	0.9	25	1.4	64		270
7,	11.8	9900	3.7	1160	2.8	593	1.6	99	1.5	79	6.0	3150	3.3	893	0.9	25	2.8	593	0.8	20	1.3	52		250
8,	7.2	4420	3.7	1160	2.6	489	1.6	99	1.5	79	4.6	1840	3.3	893	0.9	25	2.6	489	0.8	20	1.3	52		230
9,	5.0	2180	3.1	767	2.4	395	1.6	99	1.6	99	3.5	1030	3.2	829	0.8	20	2.2	307	0.8	20	1.2	43		230
10,	3.6	1090		950	2.3	350	1.5	79	1.5	79	3.0	707	2.6	489	1.0	30	1.9	190	0.8	20	1.1	36		220
11,	4.2	1530		1200	2.2	307	1.4	64	2.4	395	2.6	489	2.0	227	1.0	30	1.8	155	0.8	20	1.3	52		220
12,	3.7	1160		1000	2.2	307	1.4	64	2.8	593	4.0	1380	2.2	307	0.9	25	2.6	489	0.8	20	1.7	124		210
13,	3.0	707		800	2.1	266	1.4	64	7.5	4740	2.9	649	2.6	489	0.9	25	2.4	395	0.8	20	1.7	124		210
14,	9.7	7300		800	2.0	227	1.4	64	3.8	1230	2.4	395	4.0	1380	0.8	20	6.5	3670	0.8	20	1.7	124		200
15,	8.0	5290		1500	2.0	227	1.4	64	3.0	707	2.5	441	3.3	893	0.7	16	5.0	2180	0.8	20	1.7	124		200
16,	6.1	3250	7.8	5070	1.9	190	1.4	64	2.4	395	2.6	489	2.6	489	0.7	16	3.7	1160	0.8	20	1.6	99		200
17,	4.1	1450	9.1	6580	1.9	190	1.4	64	2.3	350	3.7	1160	2.2	307	0.7	16	2.5	441	0.8	20	1.6	9.		150
18,	9.6	7180	6.8	3990	1.9	190	1.5	79	2.8	593	3.0	707	2.1	266	0.7	16	2.2	307	0.8	20	1.5	79		150
19,	13.6	12200	4.8	2010	1.8	155	1.5	79	2.4	395	5.0	2180	2.0	227	0.8	20	2.0	227	0.8	20	1.5	79		200
20,	6.9	4090	4.0	1380	1.8	155	1.5	79	2.3	350	4.0	1380	2.0	227	0.8	20	1.9	190	0.8	20	1.3	52	5.6	2750
21,	6.7	3880	4.6	1840	1.7	124	1.5	79	2.2	307	3.9	1300	1.8	155	0.7	16	1.7	124	1.8	155	1.3	52	5.0	2180
22,	10.4	8160	7.7	4960	1.7	124	1.8	155	2.1	266	2.7	540	1.6	99	0.7	16	1.5	79	1.0	30	1.2	43	4.0	1380
23,	6.4	3560	8.6	5970	1.7	124	2.1	266	2.4	395	2.3	350	1.5	79	0.8	20	1.4	64	1.8	155	1.3	52	3.5	1030
24,	4.6	1840	5.5	2650	1.7	124	2.0	227	2.2	307	2.0	227	1.4	64	1.0	30	1.3	52	1.6	99	1.2	43	7.0	4200
25,	4.0	1380	3.9	1300	1.7	124	1.8	155	2.1	266	1.7	124	1.3	52	1.0	30	1.2	43	1.5	79	1.7	124	8.0	5290
26,	4.0	1380	3.4	959	1.6	99	2.6	489	3.6	1090	1.6	99	1.3	52	1.0	30	1.1	36	1.7	124	1.6	99	4.7	1920
27,	8.2	5510	3.3	893	1.6	99	2.3	360	3.2	829	1.5	79	1.1	36	0.9	25	1.0	30	1.5	79	1.5	79	3.7	1160
28,	9.2	1700	3.2	829	1.6	99	2.2	307	2.9	649	1.7	124	1.0	30	0.9	25	1.0	30	1.5	79	1.9	190	3.2	829
29,	5.9	3050			1.5	79	2.1	266	2.6	489	1.5	79	1.3	52	0.8	20	1.9	190	1.6	99	5.8	2950	4.5	1760
30,	4.8	2010			1.5	79	2.0	227	2.4	395	1.5	79	1.3	52	0.7	16	1.5	79	1.5	79	4.7	1920	6.8	3990
31,	4.0	1380			1.5	79			2.3	350			1.3	52	0.7	16			1.4	64			6.5	3670

Note: Relation gage height to discharge affected by ice, January 1 and 2, February 10 to 15, and December 6 to 19. Daily discharge January 1 and 2, February 10 to 15, and December 6 to 19 estimated, because of ice, on basis of climatological records, discharge of adjacent drainage areas, and observer's notes. Mean discharge December 6 to 19, estimated about 210 second-feet, varying from 150 to 270 second-feet.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF WEST FORK RIVER AT ENTERPRISE, WEST VIRGINIA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.0	3150	5.2	2360	3.1	767	5.1	2270	2.5	441	1.3	52	1.6	99	0.9	25	7.5	4740	4.0	1380	2.00	227	3.00	707
2,	5.6	2750	4.4	1680	2.9	649	4.5	1760	2.7	540	1.3	52	1.6	99	0.9	25	4.3	1600	4.8	2010	1.90	190	3.90	1300
3,	5.0	2180	3.9	1300	2.7	540	4.1	1450	2.5	441	1.2	43	1.5	79	0.8	20	3.2	829	9.3	6820	1.82	162	2.80	593
4,	6.7	3880	5.3	2460	2.5	441	5.4	2550	2.4	395	1.7	124	1.8	155	0.8	20	2.4	395	5.5	2650	1.80	155	2.60	489
5,	4.9	2090	4.8	2010	2.4	395	10.5	8280	2.2	307	1.6	99	1.7	124	0.8	20	2.3	350	3.8	1230	1.76	143	2.40	395
6,	4.7	1920	4.0	1380	2.5	441	7.5	4740	2.1	266	1.5	79	1.6	99	0.9	25	2.1	266	3.5	1030	1.90	190	2.30	350
7,	3.3	893	4.1	1450	3.3	893	6.3	3460	2.0	227	1.3	52	1.5	79	1.0	30	2.7	540	8.1	5400	5.50	2650	2.20	307
8,	3.0	707	4.0	1380	6.0	3150	5.7	2850	2.0	227	1.3	52	1.8	155	1.0	30	2.5	441	13.1	11600	5.18	2340	2.17	295
9,	4.0	1380	3.8	1230	8.2	5510	7.5	4740	1.8	155	1.3	52	1.7	124	1.0	30	2.3	350	7.2	4420	3.65	1130	2.05	246
10,	3.4	959	3.8	1230	5.6	2750	6.9	4090	1.8	155	1.2	43	1.6	99	0.9	25	2.6	489	4.4	1680	3.04	731	1.90	190
11,	3.2	829	3.4	959	4.4	1680	4.9	2090	1.8	155	1.2	43	1.4	64	0.9	25	2.7	540	4.6	1840	2.70	540	1.90	190
12,	3.0	707	3.1	767	3.7	1160	3.9	1300	1.7	124	1.4	64	1.3	52	0.8	20	4.8	2010	5.9	3050	2.56	470	2.19	303
13,	9.8	7430	2.9	649	3.4	959	3.8	1230	1.7	124	1.3	52	1.2	43	0.8	20	3.5	1030	4.2	1530	2.32	359	2.00	227
14,	12.7	11100	2.8	593	4.5	1760	3.7	1160	1.6	99	1.2	43	1.2	43	0.8	20	2.8	593	3.5	1030	5.10	2270	2.00	227
15,	7.6	4850	2.7	540	4.2	1530	9.1	6580	1.6	99	1.1	36	1.1	36	0.9	25	5.0	2180	3.8	1230	4.00	1380	5.05	2220
16,	8.0	5290	2.5	441	3.9	1300	7.0	4200	1.5	79	1.0	30	1.1	36	0.8	20	10.3	8040	4.2	1530	3.20	829	7.35	4580
17,	5.0	2180	2.3	350	3.3	893	4.6	1840	1.5	79	1.0	30	1.0	30	0.8	20	11.0	8900	9.6	7180	2.90	649	8.24	5560
18,	4.1	1450	2.3	350	3.1	767	4.1	1450	1.5	79	1.2	43	1.0	30	2.0	227	6.1	3250	7.1	4310	4.51	1770	6.20	3360
19,	3.5	1030	2.2	307	3.8	1230	4.7	1920	1.4	64	3.3	893	1.0	30	1.5	79	3.5	1030	6.8	3990	4.80	2010	5.10	2270
20,	3.0	707	3.7	1160	4.6	1840	5.6	2750	1.4	64	3.0	707	1.0	30	1.2	43	3.3	893	4.8	2010	4.40	1680	4.20	1530
21,	3.0	707	4.7	1920	5.0	2180	4.9	2090	1.4	64	2.4	395	0.9	25	1.1	36	2.9	649	3.7	1160	3.60	1090	4.00	1380
22,	7.0	4200	5.8	2950	3.9	1300	4.5	1760	1.7	124	2.2	307	0.9	25	1.1	36	7.5	4740	3.3	893	3.00	707	3.72	1180
23,	5.9	3050	4.4	1680	3.5	1030	4.1	1450	1.6	99	1.9	190	0.9	25	1.1	36	5.5	2650	3.0	707	2.70	540	3.50	1030
24,	4.4	1680	3.9	1300	3.2	829	4.5	1700	1.6	99	1.7	124	1.0	30	1.1	36	3.2	829	3.0	707	2.51	446	3.20	829
25,	3.8	1230	3.5	1030	2.8	593	4.0	1380	1.6	99	1.6	99	1.0	30	1.2	43	2.5	441	2.9	649	3.80	1230	5.62	2770
26,	4.2	1530	3.9	1300	2.6	489	3.4	959	1.6	99	1.9	190	0.9	25	1.6	99	2.5	441	2.6	489	3.71	1170	4.86	2060
27,	7.6	4850	3.8	1230	2.5	441	3.0	707	1.5	79	1.8	155	0.8	20	1.8	155	2.3	350	2.4	395	3.62	1110	10.82	8680
28	8.3	5620	3.5	1030	2.5	441	2.9	649	1.4	64	1.7	124	0.8	20	1.5	79	2.0	227	2.27	337	3.40	959	6.72	3900
29,	5.3	2950	-----	-----	2.5	441	2.8	593	1.3	52	1.8	155	0.8	20	1.9	190	4.0	1380	2.21	311	3.21	835	4.61	1850
30,	17.6	17700	-----	-----	2.4	395	2.7	540	1.3	52	1.7	124	0.8	20	7.7	4960	3.5	1030	2.04	243	3.10	767	5.42	2570
31,	9.7	7300	-----	-----	5.7	2850	-----	-----	1.3	52	-----	-----	0.8	20	10.7	8530	-----	-----	2.02	235	-----	-----	4.22	1540

ESTIMATED MONTHLY DISCHARGE OF WEST FORK RIVER, AT ENTERPRISE, W. VA.

(Drainage area 750 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1907.					
June, 2-30,	6940	99	1150	1.53	1.65
July,	7180	99	1790	2.39	2.76
August,	5510	155	796	1.06	1.22
September,	3670	124	540	0.72	0.80
October,	2550	64	621	0.83	0.95
November,	8280	226	1670	2.23	2.49
December,	7300	190	1740	2.32	2.68
1908.					
January,	7550	227	1520	2.03	2.34
February,	14100	707	2460	3.28	3.54
March,	12800	707	3400	4.53	5.22
April,	8160	190	1780	2.37	2.64
May,	16000	227	3050	4.07	4.69
June,	767	30	157	0.209	0.23
July,	649	36	162	0.216	0.25
August,	489	16	103	0.137	0.16
September,	30	12	20	0.026	0.03
October,	25	16	21	0.028	0.03
November,	20	20	20	0.027	0.03
December,	99	20	34	0.046	0.05
The year,	16000	20	1060	1.41	19.21
†1909.					
January,	5860	36	881	1.17	1.35
February,	8780	*350	2500	3.33	3.47
March,	3360	489	1220	1.63	1.88
April,	8040	266	1820	2.43	2.71
May,	[illegible]	79	741	0.988	1.14
June,	6820	155	1530	2.04	2.28
July,	489	30	116	0.155	0.18
August,	959	20	139	0.185	0.21
September,	1600	36	143	0.191	0.21
October,	4420	25	384	0.512	0.59
November,	1600	64	198	0.264	0.29
December,	3560	64	386	0.515	0.59
The year,	8780	20	824	1.10	14.90

*February minimum estimated.

†Daily discharge January 29 to February 5 and December 18 to 31 estimated on account of ice. Mean daily discharge for period December 18 to 31 estimated about 170 second-feet.

ESTIMATED MONTHLY DISCHARGE OF WEST FORK RIVER, AT ENTERPRISE, W. VA.

(Drainage area 750 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
‡1910.					
January,	12200	300	3860	5.15	5.94
February,	6580	767	2090	2.79	2.90
March,	2090	79	426	0.568	0.65
April,	489	64	138	0.184	0.21
May,	4740	79	522	0.696	0.80
June,	3150	79	798	1.06	1.18
July,	1380	30	342	0.456	0.53
August,	64	16	25	0.034	0.04
September,	3670	30	454	0.605	0.68
October,	155	20	48	0.064	0.07
November,	2950	36	253	0.337	0.38
December,	5290	....	1150	1.53	1.76
The year,	12200	16	836	1.11	15.14
1911.					
January,	17700	707	3430	4.57	5.27
February,	2950	307	1250	1.67	1.74
March,	5510	395	1280	1.71	1.97
April,	8280	540	2420	3.23	3.60
May,	540	52	161	0.215	0.25
June,	893	30	148	0.197	0.22
July,	155	20	57	0.076	0.09
August,	8530	20	482	0,643	0.74
September,	8900	227	1710	2.28	2.54
October,	11600	235	2320	3.09	3.56
November,	2650	143	958	1.28	1.43
December,	8680	190	1710	2.28	2.63
The year,	17700	20	1330	1.77	24.04

‡Daily discharge January 1 and 2, February 10 to 15 and December 6 to 19 estimated on account of ice. Mean discharge for period December 6 to 19 estimated about 210 second-feet.

DUNKARD CREEK.

DESCRIPTION OF BASIN.

Dunkard creek, a tributary of Monongahela river in Monongahela county, West Virginia, and Greene county, Penna., drains an area of approximately 235 square miles, of which 125 square miles lie in Pennsylvania. Rising in two forks, Pennsylvania and West Virginia forks, the former heading in the south central part of Greene county, and the latter in the western part of Monongahela county, W. Va., which join on the Pennsylvania-West Virginia line, the stream follows a general easterly direction through a rolling, well settled, farming country, practically deforested, with many turns, crossing and recrossing the state line to its mouth, three miles below Point Marion. The distance from the forks to the mouth is about 36 miles.

The West Virginia fork rises at an elevation of about 1,300 feet, and the Pennsylvania fork at an elevation of about 1,400 feet. The junction lies at an elevation of 975 feet, and the mouth at an elevation of 800 feet. The forks have an approximate fall of 30 feet per mile, whereas the rate of fall from the junction to the mouth is at the rate of five feet per mile. The principal tributaries are Pennsylvania and West Virginia forks. There are only a few small villages and one borough in this basin, none of which use the water of this stream for domestic supply. This creek in the fall of 1908 was absolutely dry at a point a short distance above its mouth.

The mean annual precipitation over this watershed is from 40 to 45 inches.

The discharge has been measured since October 14th, 1909, at "Bobtown," about two miles above the mouth.

OHIO BASIN—STATION NO. 26.

DUNKARD CREEK AT "BOBTOWN," PA.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania, in cooperation with the Flood Commission of Pittsburg, on October 14th, 1909, and is located on a single span, covered wooden bridge at "Bobtown," about two miles above the mouth.

The channel above and below the station is straight. Both banks are high and do not overflow. The bed is rocky and is mostly of solid rock and is permanent. There is a deep, quiet pool under the bridge at low stages with very sluggish velocity. The creek goes dry during every period of drought.

Discharge measurements are made from the downstream side of the bridge during floods and by wading during low stages. The initial point for soundings is top edge of bridge seat, left abutment.

A twelve foot staff gage is bolted to the downstream wing of the left abutment. The elevation of zero is arbitrary datum. Bench mark No. 1 is shelf on top of second course from bottom, third stone in from face; elevation, 2.64 feet above zero of gage. The gage is read twice daily by Frank South.

Since the establishment of this station 2 discharge measurements have been made. Owing to the insufficient number of discharge measurements, no rating curve has been computed for this station and only the discharge measurements and daily gage heights have been published.

DISCHARGE MEASUREMENTS OF DUNKARD CREEK, AT "BOBTOWN," GREENE COUNTY, PENNA.

(Drainage area 230 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1909.							
1	Oct. 14,	Kenneth Grant,	7	2.2	.18	.58	.41	Wading measurement one mile above mouth.
	1911.							
2	July 14,	Langenheim,	33	18.6	.48	.96	8.9	Wading measurement at 2nd ford below Bobtown.

DAILY MEAN GAGE HEIGHTS OF DUNKARD CREEK, AT "BOBTOWN," GREENE COUNTY, PENNA.

1909. Day.	OCT. G H	NOV. G H	DEC. G H
1,	-------	0.70	0.62
2,	-------	0.69	0.62
3,	-------	0.67	0.62
4,	-------	0.64	0.62
5,	-------	0.62	0.62
6,	-------	0.64	0.62
7,	-------	0.65	0.66
8,	-------	0.68	0.70
9,	-------	0.70	0.71
10,	-------	0.72	0.70
11,	-------	0.70	0.70
12,	-------	0.70	0.70
13,	-------	0.70	0.82
14,	0.58	0.68	1.60
15,	0.58	0.68	1.92
16,	0.60	0.68	1.60
17,	0.60	0.67	1.60
18,	0.60	0.64	1.51
19,	0.60	0.62	1.31
20,	0.60	0.62	1.14
21,	0.62	0.61	1.12
22,	0.62	0.61	1.02
23,	0.72	0.62	0.96
24,	0.90	0.62	0.86
25,	0.94	0.62	0.82
26,	0.96	0.62	0.90
27,	0.90	0.62	0.85
28,	0.83	0.62	0.82
29,	0.79	0.62	0.86
30,	0.74	0.62	0.90
31,	0.72	-------	0.91

DAILY MEAN GAGE HEIGHTS OF DUNKARD CREEK AT "BOBTOWN," GREENE COUNTY, PENNA.

1910. Day.	JANUARY.	FEBRUARY.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.
	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H
1,	0.94	2.10	3.88	1.08	1.62	1.70	1.34	1.34	0.74	0.68	0.67	1.66
2,	1.41	2.02	3.37	1.13	1.50	1.97	1.27	1.24	0.78	0.64	0.70	1.47
3,	3.24	2.40	2.88	1.09	1.44	2.16	e3.70	1.14	1.26	0.62	0.70	1.40
4,	3.05	2.90	2.55	1.09	1.43	2.01	3.04	1.04	1.96	0.60	0.70	1.33
5,	2.30	2.76	2.35	1.20	1.43	1.83	2.22	0.96	1.57	0.60	0.69	1.30
6,	4.90	2.34	2.21	1.17	1.35	2.00	1.85	0.90	1.47	0.59	0.68	1.29
7,	3.75	1.90	2.07	1.29	1.27	2.02	4.43	0.85	1.46	0.60	0.68	1.39
8,	2.40	2.06	1.97	1.22	1.25	1.84	3.85	0.81	1.32	0.59	0.68	1.35
9,	2.29	1.85	1.86	1.20	1.28	1.70	2.60	0.79	1.30	0.58	0.67	1.43
10,	1.95	1.86	1.72	1.13	1.32	2.09	2.68	0.78	1.24	0.57	0.68	1.52
11,	1.88	1.79	1.67	1.10	1.42	2.50	1.94	0.80	1.20	0.55	0.69	1.55
12,	1.80	1.99	1.61	1.14	2.59	2.87	1.74	0.78	1.14	0.52	0.70	1.49
13,	1.83	2.13	1.56	1.06	2.40	2.40	2.35	0.73	1.06	0.52	0.70	1.45
14,	5.90	2.09	1.52	1.01	2.28	2.12	3.13	0.69	1.12	0.50	0.70	1.52
15,	3.80	1.84	1.49	1.04	2.28	1.97	2.28	0.68	1.16	0.49	0.70	1.56
16,	2.87	b 3.92	1.43	1.10	2.15	1.84	1.98	0.64	1.10	0.50	0.70	1.56
17,	2.68	4.45	1.39	1.05	1.54	1.72	1.86	0.62	1.05	0.50	0.70	1.56
18,	a6.75	3.32	1.35	1.03	1.57	1.62	1.74	0.60	1.00	0.50	0.70	1.62
19,	4.80	2.52	1.32	1.03	1.94	d 3.40	1.58	0.72	0.94	0.51	0.70	1.82
20,	3.09	2.48	1.30	1.11	1.72	2.41	1.42	0.70	0.90	0.51	0.70	2.59
21,	4.80	3.97	1.30	1.31	1.75	1.93	1.32	0.64	0.88	0.52	0.70	3.00
22,	4.25	4.95	1.30	1.86	2.08	1.68	1.26	0.59	0.86	0.62	0.70	2.68
23,	3.05	3.65	1.28	1.84	1.90	1.55	1.18	0.56	0.82	0.64	0.72	2.44
24,	2.75	2.74	1.28	1.87	1.74	1.47	1.14	0.55	0.77	0.64	0.70	f 4.14
25,	2.38	2.42	1.28	2.36	1.94	1.37	1.07	0.53	0.71	0.62	0.71	3.04
26,	2.15	2.35	1.20	2.40	c3.00	1.28	1.01	0.58	0.66	0.62	0.72	2.48
27,	4.14	2.34	1.15	2.35	2.29	1.22	1.00	0.56	0.66	0.65	0.72	2.17
28,	3.50	3.50	1.13	2.08	1.96	2.07	0.98	0.54	0.79	0.68	0.90	1.98
29,	2.92	......	1.12	1.86	1.74	1.64	0.94	0.52	0.77	0.68	1.83	f3.96
30,	2.54	......	1.13	1.75	1.68	1.46	1.19	0.50	0.68	0.67	1.98	4.44
31,	2.36	......	1.11	.....	1.67	.....	1.16	0.56	......	0.66	......	3.12

a Maximum 8.0 feet at 5 P. M.
b Maximum 5.6 feet at 5 P. M.
c Maximum 3.4 feet at 5 A. M.
d Maximum 3.9 feet at 12 M.
e Maximum 5.52 feet at 12.30 P. M.
f Maximum 5.00 feet at 7.30 A. M. on 24th—11 A. M. on 29th.

DAILY MEAN GAGE HEIGHTS OF DUNKARD CREEK AT "BOBTOWN," GREENE COUNTY, PENNA.

1911. Day.	JANUARY.	FEBRUARY.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.
	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H	G H
1,	2.70	------	2.14	2.13	2.52	1.44	1.19	0.52	2.45	2.47	1.47	1.74
2,	3.14	------	2.07	2.20	d 4.70	1.26	1.10	0.51	1.98	4.70	1.46	1.79
3,	3.06	2.50	1.98	2.20	2.97	1.24	1.02	0.51	1.65	3.68	1.41	1.78
4,	2.70	3.45	1.90	2.62	2.54	1.24	0.94	0.56	1.46	2.81	1.36	1.83
5,	2.30	3.25	1.86	c4.97	2.26	1.18	0.88	0.52	1.30	2.41	1.32	1.73
6,	2.20	2.94	1.94	4.20	2.08	1.20	0.82	0.50	1.58	2.10	1.38	1.70
7,	2.00	3.30	2.31	3.65	1.93	1.18	0.83	0.50	3.37	3.95	2.44	1.72
8,	2.02	3.10	2.34	3.25	1.82	1.88	0.78	0.52	2.36	3.82	2.36	1.65
9,	2.35	2.98	3.33	3.90	1.75	1.50	0.72	0.50	2.60	2.85	2.10	1.66
10,	2.15	2.70	3.50	3.25	1.70	1.34	0.70	0.50	3.55	2.50	1.92	1.69
11,	2.15	2.33	2.95	2.66	1.64	1.23	0.68	0.54	2.98	3.15	1.79	1.75
12,	2.16	2.23	2.55	2.44	1.56	1.20	0.92	0.52	2.48	3.60	1.80	1.81
13,	a 6.83	2.12	2.39	2.48	1.48	1.15	0.94	0.66	2.05	2.90	3.25	1.94
14,	4.40	2.08	2.19	2.48	1.42	1.11	0.91	0.73	1.80	2.52	2.65	2.05
15,	3.70	2.05	2.10	3.82	1.38	1.15	0.90	1.37	f4.29	2.42	2.38	2.80
16,	3.26	1.93	2.03	3.12	1.35	1.12	0.84	1.62	5.05	2.64	2.32	4.35
17,	2.61	1.82	1.89	2.72	1.28	1.12	0.82	1.30	3.92	2.48	2.18	3.70
18,	2.26	1.84	1.90	2.42	1.26	1.43	0.76	1.35	2.58	g 5.67	3.03	2.90
19,	2.10	2.40	1.95	2.26	1.21	2.38	0.74	1.12	2.68	3.48	3.30	2.51
20,	1.98	b 3.69	2.40	2.70	1.19	1.84	0.70	0.98	2.20	2.90	2.65	2.25
21,	1.98	3.45	2.35	2.76	1.16	1.58	0.68	0.88	1.95	2.45	2.38	2.17
22,	2.28	2.94	2.18	3.00	1.10	1.36	0.64	0.80	2.32	2.27	2.16	2.28
23,	2.34	2.71	2.08	4.00	1.08	1.20	0.61	0.76	2.14	2.08	2.01	2.32
24,	2.21	2.67	1.92	3.15	1.06	1.12	0.62	0.73	1.82	1.95	2.02	2.50
25,	2.32	2.64	1.78	2.69	1.02	e 1.93	0.62	0.85	1.68	1.78	2.39	2.80
26,	2.54	2.52	1.72	2.44	1.00	1.82	0.61	1.12	1.54	1.66	2.31	3.00
27,	3.87	2.49	1.74	2.23	0.99	1.50	0.60	1.34	1.44	1.61	2.20	h 5.30
28,	4.40	2.31	1.74	2.05	0.96	1.52	0.58	1.15	2.02	1.54	2.12	3.44
29,	3.70	------	1.68	1.98	0.96	1.53	0.56	1.78	4.16	1.45	2.06	2.70
30,	------	------	1.74	2.09	0.98	1.34	0.55	3.48	3.22	1.46	1.98	2.53
31,	------	------	1.95	----	1.25	-----	0.54	3.20	------	1.46	------	3.90

a Maximum 8.0 feet at 2 P. M.
b Maximum 4.3 feet during night.
c Maximum 5.3 feet during A. M.
d Maximum 5.3 feet.
e Maximum 2.51 feet at 1 P. M.
f Maximum 5.7 feet at 2 P. M.
g Maximum 6.2 feet at 9 A. M.
h Maximum 5.8 feet at 8 A. M.
January 20 to February 2 inclusive gage carried out by high water.

TURTLE CREEK.

DESCRIPTION OF BASIN.

Turtle creek, a tributary of the Monongahela river in Allegheny and Westmoreland counties, drains an area of approximately 145 square miles. Rising in the western part of Westmoreland county, it flows in a southwesterly direction along the Allegheny county line to where it is joined by its largest tributary, Brush creek, and thence through Allegheny county to its mouth, just above Braddock borough, a total distance of about twenty miles. The basin is fan-shaped and the area drained is a rolling, agricultural country, only seven per cent. being forested, the upper section being entirely devoted to farming, whereas the lower section, along the valley, is congested by railroads and industrial establishments. The entire watershed is densely inhabited, many large and prosperous boroughs lying along the stream. This stream rises at an elevation of approximately 756 feet, making the average fall about twenty-five feet per mile, but there are numerous stretches of this stream which are flat, showing only a fall of from five to nine feet per mile. In the lower section of the creek the channel is filled to a considerable depth with silt. Only one borough rceives a domestic water supply from a tributary of Turtle creek, although many manufacturing establishments use the water for industrial purposes.

The mean annual precipitation over this watershed is from 35 to 40 inches.

The discharge has been measured since December 1st, 1907, at East Pittsburg, about one and one-half miles above the mouth.

OHIO BASIN—STATION NO. 27.

TURTLE CREEK AT EAST PITTSBURG, PA.

DESCRIPTION OF STATION.

This station was established on December 1st, 1907, by the Water Supply Commission of Pennsylvania, and is located on the Cable Avenue Viaduct from P. R. R. depot to Westinghouse Works, in East Pittsburg.

The channel is straight above and below the station and is walled in for 1,000 feet, while there is a low dam 200 feet downstream. Both banks are high and do not overflow except in high backwater floods from the Monongahela river. The bed of the stream is composed of gravel and muddy clay and is somewhat shifting.

Discharge measurements are made from the downstream side of the Cable Avenue Viaduct, the initial point for soundings being a point on the downstream hand-rail directly above top edge coping of left bridge seat.

A 16 ft. staff gage is fastened to the right abutment, downstream corner, the elevation of zero being 722.88 feet. Bench mark No. 1 is top of right abutment, downstream corner; elevation 746.63 feet or 23.75 feet above gage datum. The gage is read twice daily by the Westinghouse Electric and Manufacturing Company, East Pittsburg.

This station is within reach of backwater floods from the Monongahela river.

Since the establishment of this station eleven discharge measurements have been made.

DISCHARGE MEASUREMENTS OF TURTLE CREEK, AT EAST PITTSBURG, ALLEGHENY COUNTY, PENNA.

(Drainage area 145 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1907.							
1	Nov. 7,	Eckels,	84	215	2.22	1.85	477	
	1908.							
2	Jan. 10,	Grant,	67	107	0.54	1.35	58	
3	Feb. 15,	Eckels,	87	578	5.07	6.85	2956	Strong upstream wind. Creek falling.
4	Aug. 22,	Stevens,	54	64	0.42	0.79	26.7	
5	Sept. 24,	Langenheim,	14.5	11.4	1.27	0.25	14.5	Wading Measurement 300 feet above Cable Ave. viaduct.
	1909.							
6	Mar. 11,	Kenneth Grant,	87	195	1.92	2.07	374	
	1910.							
7	Jan. 18,	Eckels,				10.10	6410	Float measm't.
8	Jan. 29,	do.	87.5	177	2.03	2.50	361	
9	Feb. 21,	do.	87.5	391	3.86	4.90	1509	
	1912.							
10	Aug. 1,	Boehringer,	88.5	188	1.51	2.13	284	0.6 msmt. from bridge.
11	Nov. 11,	Ryder,	98	139	1.26	1.60	175	

DISCHARGE TABLE FOR TURTLE CREEK, AT EAST PITTSBURG, ALLEGHENY COUNTY, FROM DEC. 1, 1907.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec-ft.	Feet.	Sec-ft.	Feet.	Sec-ft.	Feet.	Sec-ft.	Feet.	Sec-ft.
0.20	10	.30	345	.40	1235	.50	2640	.60	4795
.30	11	.40	380	.50	1290	.60	2730	.70	4900
.40	12	.50	415	.60	1345	.70	2820	.80	5010
.50	15	.60	450	.70	1400	.80	2910	.90	5120
.60	19	.70	485	.80	1455	.90	3000	9.00	5230
.70	24	.80	520	.90	1510	7.00	3100	.10	5335
.80	30	.90	555	5.00	1570	.10	3200	.20	5440
.90	37	3.00	595	.10	1630	.20	3300	.30	5545
1.00	45	.10	635	.20	1690	.30	3405	.40	5655
.10	60	.20	675	.30	1750	.40	3510	.50	5765
.20	75	.30	715	.40	1810	.50	3615	.60	5875
.30	90	.40	755	.50	1875	.60	3725	.70	5985
.40	110	.50	800	.60	1940	.70	3835	.80	6095
.50	130	.60	845	.70	2005	.80	3945	.90	6200
.60	150	.70	890	.80	2075	.90	4055	10.00	6305
.70	175	.80	935	.90	2150	8.00	4165	.10	6410
.80	200	.90	980	6.00	2225	.10	4270	.20	6515
.90	225	4.00	1025	.10	2300	.20	4375	.30	6620
2.00	255	.10	1075	.20	2380	.30	4480	.40	6725
.10	285	.20	1125	.30	2465	.40	4585	.50	6830
.20	315	.30	1180	.40	2550	.50	4690		

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF TURTLE CREEK, AT EAST PITTSBURG, ALLEGHENY COUNTY, PA.

1907.	DEC.	
Day.	G H	Dis.
1,	1.00	45
2.	1.00	45
3.	1.00	45
4,	1.00	45
5,	1.25	82
6,	0.75	27
7,	1.00	45
8,	*1.25	82
9,	1.50	130
10,	2.00	255
11,	1.75	188
12,	1.50	130
13,	1.25	82
14,	1.62	155
15,	1.88	220
16,	2.12	291
17,	1.75	188
18,	1.50	130
19,	1.50	130
20,	1.25	82
21,	1.62	155
22,	1.25	82
23,	6.25	2422
24,	3.52	809
25,	2.30	345
26,	2.25	330
27,	2.36	366
28,	2.15	300
29,	1.98	249
30,	2.30	345
31,	2.20	315

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*Interpolated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF TURTLE CREEK AT EAST PITTSBURG, ALLEGHENY COUNTY, PENNA.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.85	212	1.80	200	4.90	1510	2.10	285			1.45	120	0.90	37	0.70	24	0.60	19	0.75	27	0.80	30	0.70	24
2,	1.65	162	1.65	162	4.85	1482	2.05	270			1.30	90	0.70	24	0.60	19	0.55	17	0.75	27	0.65	22	0.75	27
3,	1.60	150	1.40	110	4.20	1125	2.00	255			1.30	90	0.55	17	0.70	24	0.60	19	0.70	24	0.80	30	0.70	24
4,	1.66	165	1.40	110	2.35	362	2.00	255			1.30	90	*0.50	15	1.00	45	0.60	19	0.80	30	0.55	17	0.70	24
5,	1.90	225	1.30	90	2.10	285					1.30	90	0.80	30	*0.65	22	0.70	24	0.70	24	0.35	17	0.80	30
6,	1.50	130	1.55	140	4.40	1235					1.30	90	0.50	15	1.40	110	0.70	24	0.60	19	0.65	22	0.75	27
7,	1.55	140	1.60	150	3.62	854			4.05	1050	*1.25	82	0.85	34	1.25	82	0.95	41	0.50	15	0.75	27	1.11	62
8,	1.60	150	1.50	130	3.15	655			3.85	958	1.20	75	1.10	60	1.00	45	0.65	22	0.50	15	0.96	41	0.80	30
9,	1.55	140	1.60	150	3.35	735			2.60	450	1.25	82	1.00	45	*1.05	52	0.65	22	0.65	32	0.65	22	0.80	30
10,	1.35	100	1.45	120	3.20	675			*2.20	315	1.15	68	0.90	37	1.10	60	0.70	24	0.65	22	0.75	27	0.75	27
11,	1.40	110	1.70	175	2.40	380			1.80	200	1.25	82	0.80	30	1.00	45	0.70	24	0.90	37	0.60	19	0.75	27
12,	2.92	563	2.30	345	2.20	315			1.70	175	1.20	75	*0.90	37	1.00	45	0.65	22	0.75	27	0.60	19	0.95	41
13,	2.95	575	3.00	595	2.10	285			1.70	175	1.20	75	1.00	45	1.05	52	0.80	30	0.60	19	0.65	22	0.95	41
14,	2.15	300	3.62	854	2.35	362			1.65	162	*1.25	82	1.10	60	1.15	68	0.85	34	0.60	19	0.65	22	0.70	24
15,	1.85	212	6.70	2820	2.85	538			2.10	285	1.30	90	1.15	68	1.00	45	0.70	24	0.70	24	0.15	34	0.75	27
16,	1.85	212	a10.40	6725	2.45	398			1.70	175	1.30	90	1.00	45	1.00	45	0.75	27	0.65	22	0.75	27	0.70	24
17,	1.60	150	3.95	1002	2.25	330			1.75	188	1.20	75	1.20	75	1.15	68	0.75	27	0.70	24	0.80	30	0.80	30
18,	1.80	200	2.40	380	4.10	1075			2.40	380	1.20	75	1.10	60	1.05	68	0.65	22	0.80	30	0.70	24	1.21	76
19,	1.95	240	200	255	b 6.10	2300			2.25	330	1.20	75	*1.05	52	0.95	41	0.70	24	0.70	24	0.70	24	1.00	45
20,	1.45	120	1.95	240	5.05	1600			2.00	255	1.40	110	1.00	45	0.85	34	0.85	34	0.70	24	0.70	24	0.90	37
21,	1.40	110	1.70	175	2.50	415			1.90	225	1.30	90	0.90	37	0.50	30	0.60	19	0.65	22	0.75	27	0.70	24
22,	1.40	110	1.80	200	2.10	285			1.85	212	1.25	82	0.85	34	1.20	75	0.60	19	0.65	22	0.90	37	0.80	30
23,	1.45	120	1.60	150	2.10	285			1.80	200	1.70	175	0.80	30	1.20	75	0.70	24	0.55	17	0.75	27	0.75	27
24,	1.20	75	1.80	200	2.15	300			*1.70	175	1.45	120	0.90	37	1.20	75	0.40	12	0.80	30	0.60	19	0.75	27
25,	1.30	90	1.85	212	2.00	255			1.65	162	1.40	110	1.20	75	1.10	60	0.60	19	0.65	22	0.70	24	0.90	37
26,	1.85	212	2.45	398	1.85	212			1.45	120	1.25	82	1.25	82	0.90	37	0.75	27	0.60	19	0.90	37	0.85	34
27,	1.85	212	2.05	270	1.80	200			1.40	110	*1.15	68	1.10	60	0.85	34	0.90	37	0.65	22	0.60	19	0.80	30
28,	1.50	130	1.80	200	2.00	255			1.40	110	1.00	45	0.90	37	0.80	30	0.80	30	0.70	24	0.70	24	0.70	24
29,	2.40	380	2.05	270	3.30	715			1.60	150	1.30	90	*1.20	75	1.00	45	0.85	34	0.60	19	0.75	27	0.75	27
30,	1.60	150			2.60	450			1.60	150	1.00	45	0.75	27	0.75	27	0.75	27	0.65	22	0.50	15	0.80	30
31,	1.40	110			2.40	380			*1.50	130			0.70	24	0.75	27			0.80	30			0.80	30

*Interpolated..
a Maximum 10.7 feet at 1 P. M.=7040 sec. ft.
b Maximum 7.4 feet at 8.30 A. M.=3510 sec. ft.
Note.—Gage heights to nearest half-tenths below 1.10 ft.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF TURTLE CREEK AT EAST PITTSBURG, ALLEGHENY COUNTY, PA.

1909. Day	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	0.80	30	1.05	52	1.74	185	1.42	114	4.70	1433	0.95	41	0.80	30	0.70	24	0.70	24	0.55	17	0.75	27	0.05	22
2,	0.70	24	1.05	52	3.84	953	1.49	128	3.28	707	1.24	81	0.75	27	0.70	24	0.60	19	0.60	19	0.75	27	0.60	19
3,	0.80	30	1.05	52	4.43	1252	1.50	130	2.58	443	1.44	118	0.75	27	0.80	30	0.60	19	0.70	24	0.75	27	0.70	24
4,	0.90	37	1.05	52	3.33	727	1.42	114	2.52	422	1.28	87	0.75	27	0.80	30	0.70	24	0.50	15	0.70	24	0.75	27
5,	1.00	45	1.42	114	2.63	460	1.32	94	2.46	391	2.46	401	0.75	27	0.85	34	0.75	27	0.70	24	0.80	30	0.80	30
6,	1.14	66	1.58	146	2.20	315	1.86	215	2.12	291	1.73	182	0.70	24	0.85	34	0.70	24	0.25	10	0.80	30	0.70	24
7,	0.90	37	1.50	130	2.36	366	2.63	460	1.90	225	1.31	92	0.60	19	0.75	27	0.60	19	0.60	19	0.80	30	0.95	41
8,	0.80	30	1.15	68	1.96	243	1.98	249	1.75	188	1.29	88	0.55	17	0.65	22	0.60	19	0.65	22	0.80	30	0.80	30
9,	0.85	34	1.37	104	2.25	330	1.92	231	1.62	155	1.14	66	0.60	19	0.65	22	0.65	22	0.65	22	0.85	34	0.75	27
10,	0.95	41	2.20	315	1.94	237	1.88	220	1.65	162	1.14	66	0.60	19	0.70	24	0.65	22	1.17	70	0.85	34	0.60	19
11,	0.90	37	1.81	202	2.04	267	1.53	136	1.52	134	1.32	94	0.70	24	0.70	24	0.65	22	1.14	66	0.80	30	0.60	19
12,	0.80	30	1.30	90	1.84	210	1.50	130	1.41	112	1.16	69	0.70	24	0.60	19	0.70	24	1.05	52	0.75	27	0.70	24
13,	0.65	22	1,83	208	1.89	222	1.52	134	1.38	106	1.10	60	0.70	24	0.70	24	0.55	17	1.05	52	0.75	27	1.26	84
14,	0.80	30	1.74	185	1.71	178	3.20	675	1.29	88	1.10	60	0.70	24	0.60	19	0.60	19	0.85	34	0.80	30	1.48	126
15,	1.53	136	2.34	359	1.77	192	2.37	370	1.27	86	1.10	60	0.70	24	1.52	134	0.65	22	0.65	22	0.75	27	1.14	66
16,	1.44	118	3.60	845	1.63	158	1.98	249	1.27	86	1.05	52	0.70	24	1.16	69	1.11	62	0.70	24	0.85	34	1.00	45
17,	1.15	68	2.17	306	1.48	126	1.76	190	1.18	72	1.05	52	0.75	27	1.10	60	0.75	27	0.65	22	0.80	30	0.75	27
18,	1.00	45	1.84	210	1.40	110	1.64	160	1.14	66	1.14	66	0.65	22	0.85	34	0.75	27	0.85	34	0.70	24	0.80	30
19,	0.75	27	1.69	172	1.56	142	1.55	140	1.11	62	1.00	45	0.80	30	0.75	27	0.65	22	0.80	30	0.65	22	0.80	30
20,	1.10	60	2.49	412	1.70	175	1.65	162	1.05	52	0.90	37	0.60	19	1.16	69	0.70	24	0.80	30	0.85	34	0.80	30
21,	1.00	45	2.14	297	1.59	148	1.68	170	1.20	75	0.90	37	0.45	14	0.85	34	0.65	22	0.80	30	0.80	30	0.50	15
22,	1.37	104	1.92	231	1.46	122	3.39	751	1.10	60	1.00	45	0.55	17	0.75	27	0.55	17	0.75	27	0.65	22	0.60	19
23,	1.92	231	3.18	667	1.38	106	2.84	534	1.10	60	0.95	41	1.05	52	0.70	24	0.70	24	1.16	69	0.65	22	0.65	22
24,	1.64	160	5.58	1925	1.42	114	2.40	380	1.00	45	0.95	41	0.80	30	0.75	27	0.85	34	1.36	102	0.70	24	0.80	30
25,	1.58	140	3.62	854	2.08	279	2.02	261	1.05	52	0.90	37	0.80	30	0.70	24	0.75	27	0.95	41	0.80	30	0.80	30
26,	1.36	102	2.85	538	2.08	279	2.12	291	1.05	52	0.90	37	0.80	30	0.75	27	0.75	27	0.85	34	0.70	24	0.80	30
27,	1.14	66	2.10	285	2.11	288	2.14	297	1.10	60	0.90	37	0.80	30	0.75	27	0.60	19	0.75	27	0.75	27	0.80	30
28,	1.05	66	1.55	140	1.88	220	1.88	220	1.10	60	0.90	37	0.70	24	0.70	24	0.70	24	0.75	27	0.75	27	0.80	30
29,	1.43	116			1.67	168	1.74	185	1.00	45	0.95	41	0.75	27	0.80	30	0.60	19	0.75	27	0.70	24	0.80	30
30,	1.32	94			1.62	155	3.28	707	0.90	37	0.80	30	0.70	24	0.70	24	0.55	17	0.80	30	0.75	27	0.80	30
31,	1.05	52			1.59	148			0.95	41			0.65	22	0.70	24			0.75	27			0.80	30

Note.—Gage heights below 1.10 feet to nearest half-tenths.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF TURTLE CREEK AT EAST PITTSBURG, ALLEGHENY COUNTY,

1910. Day	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	0.83	32	1.76	190	4.00	1025	1.03	50	1.40	110	0.82	31	0.96	42	0.75	27	0.67	22	0.60	19	0.90	37	1.27	86
2,	2.16	303	1.68	170	3.03	607	1.00	45	1.39	108	0.86	34	0.96	42	0.75	27	0.66	22	0.72	25	0.92	39	1.20	75
3,	1.97	246	1.66	165	2.81	524	0.98	43	1.27	86	1.02	48	0.88	36	0.75	27	0.66	22	0.70	24	1.24	81	1.20	75
4,	4.35	1208	1.65	162	2.50	415	1.00	45	1.27	86	1.14	66	0.84	33	0.74	26	0.71	25	0.68	23	1.20	75	1.44	118
5,	1.43	116	1.61	152	2.20	315	1.01	46	1.06	54	1.21	76	0.82	31	0.74	26	1.28	87	0.69	24	1.17	70	1.22	78
6,	4.00	1025	1.46	122	1.86	215	0.98	43	1.02	48	0.98	43	0.80	30	0.74	26	1.20	75	0.68	23	1.16	69	1.19	74
7,	2.75	502	1.41	112	1.99	252	1.02	48	1.02	48	0.97	43	0.83	32	0.70	24	1.05	53	1.52	134	1.16	69	1.21	76
8,	1.08	57	1.40	110	1.78	195	1.01	46	1.02	48	0.98	43	1.49	128	0.46	14	1.50	130	1.40	110	1.12	63	1.20	75
9,	1.00	45	1.30	90	1.58	146	0.98	43	1.00	45	0.98	43	1.04	51	0.58	18	1.42	114	1.40	110	1.12	63	1.19	74
10,	1.20	75	1.50	130	1.51	132	0.96	42	1.00	45	1.05	52	0.87	35	0.59	19	1.06	54	1.38	106	1.13	64	1.18	72
11,	1.15	68	1.30	90	1.46	122	0.93	39	1.02	48	1.22	78	0.86	34	0.66	22	0.93	39	1.37	104	1.14	66	1.25	82
12,	1.10	60	1.29	88	1.47	124	0.92	39	1.00	45	1.31	92	0.85	34	0.70	24	0.91	38	1.30	90	1.14	66	1.25	82
13,	1.28	87	1.29	88	1.23	80	0.91	38	0.98	43	1.00	45	0.91	38	0.75	27	1.95	240	1.26	84	1.16	69	1.20	75
14,	2.85	538	1.16	69	1.46	122	0.90	37	0.99	44	1.00	45	0.89	36	0.75	27	1.38	106	1.29	88	1.20	75	1.20	75
15,	2.17	306	1.02	48	1.36	102	0.90	37	1.00	45	1.00	45	0.87	35	0.70	24	1.16	69	1.35	100	1.18	72	1.20	75
16,	1.68	170	4.50	1290	1.26	84	0.90	37	0.94	40	0.99	44	0.86	34	0.64	21	0.94	40	1.38	106	1.17	70	1.18	72
17,	1.50	130	3.60	845	1.26	84	0.99	44	0.89	36	1.06	54	0.86	34	0.50	15	0.92	39	1.37	104	1.18	72	1.17	70
18,	a 9.80	6095	2.14	297	1.26	84	0.91	38	1.15	68	1.12	63	0.85	34	0.62	20	0.77	28	1.30	90	1.18	72	1.25	82
19,	6.80	2910	1.72	180	1.20	75	0.94	40	1.10	60	1.70	175	0.85	34	0.70	24	0.76	28	1.20	75	1.18	72	1.30	90
20,	2.95	575	2.72	492	1.20	75	1.02	48	1.18	72	b 4.80	110	0.86	34	0.66	22	0.75	27	1.10	60	1.18	72	1.30	90
21,	6.10	2300	3.57	832	1.20	75	1.60	150	1.26	84	0.95	41	0.85	34	0.66	22	0.62	20	1.10	60	1.00	45	1.34	98
22,	3.85	958	3.50	800	1.18	72	1.40	110	1.25	82	0.92	39	0.86	34	0.58	18	0.48	14	1.06	54	1.08	57	1.68	170
23,	2.37	370	2.48	408	1.16	69	1.60	150	1.21	76	0.90	37	0.85	34	0.60	19	0.42	13	1.00	45	1.14	66	1.67	168
24,	2.20	315	2.29	342	1.15	68	1.60	150	1.19	74	0.92	39	0.75	27	0.58	18	0.55	17	1.24	81	1.24	81	3.57	832
25,	1.80	200	2.11	288	1.12	63	4.40	1235	1.10	60	0.87	35	0.75	27	0.60	19	1.14	66	1.09	58	1.20	75	2.25	330
26,	1.70	175	2.48	408	1.10	60	2.57	440	1.00	45	0.94	40	0.74	26	0.75	27	1.65	162	1.20	75	1.20	75	1.96	243
27,	3.70	890	4.65	1372	1.07	56	1.80	200	0.93	39	0.96	42	0.75	27	0.66	22	0.83	32	1.33	96	1.20	75	1.94	237
28,	2.60	450	6.50	2640	1.02	48	1.50	130	0.88	36	0.97	43	0.79	29	0.58	18	0.60	19	1.33	96	1.25	82	2.19	312
29,	2.16	303	-----	-----	1.00	45	1.40	110	0.83	32	0.96	42	0.79	29	0.58	18	0.45	14	1.04	51	1.39	108	3.70	890
30,	1.85	212	-----	-----	1.14	66	1.28	87	0.96	42	0.94	40	0.79	29	0.58	18	0.42	13	0.92	39	1.30	90	4.25	1152
31,	1.79	198	-----	-----	1.06	54	-----	-----	0.96	42	-----	-----	0.77	28	0.60	19	-----	-----	0.83	32	-----	-----	3.21	679

a Maximum 11.10 feet at 5 P. M.=7450 sec ft.

b Gage height affected by backwater from Monongahela River. Interpolated discharge used 1.40 feet=110 sec. ft.

Note.—All gage heights below 1.10 feet to nearest half-tenths.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF TURTLE CREEK AT E. PITTSBURG, ALLEGHENY COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.39	376	2.75	502	2.17	306	1.28	87	2.20	315	1.98	249	1.50	130	1.49	128	1.75	188	1.95	240	1.65	162	1.98	249
2,	2.76	506	2.50	415	2.16	303	1.28	87	2.30	345	1.96	243	1.35	100	1.48	126	1.72	180	2.88	548	1.64	160	1.92	231
3,	2.15	300	2.30	345	2.16	303	1.23	80	2.15	300	1.94	237	1.25	82	1.81	202	1.56	142	3.12	643	1.62	155	1.88	220
4,	2.00	255	2.48	408	2.02	261	1.18	72	1.95	240	1.53	136	1.00	45	1.60	150	1.48	126	2.88	548	1.60	150	1.86	215
5,	1.98	249	2.50	415	1.44	118	2.80	520	1.90	225	1.50	130	0.98	43	1.58	146	1.35	100	2.00	255	1.84	210	1.80	200
6,	1.98	249	2.30	345	1.50	130	2.90	555	1.86	215	1.59	148	1.12	63	1.32	94	2.50	415	1.90	225	1.82	205	1.75	188
7,	1.96	243	2.35	362	1.37	104	3.50	800	1.49	128	1.62	155	1.27	86	1.30	90	1.95	240	3.10	635	1.80	200	1.72	180
8,	1.99	252	2.00	255	1.37	104	3.10	635	1.20	75	1.[illegible]	148	1.24	81	1.30	90	1.80	200	2.52	422	1.78	195	1.70	175
9,	2.24	327	2.00	255	1.36	102	3.10	635	1.18	72	1.56	142	1.24	81	1.28	87	3.25	695	2.12	291	1.75	188	2.12	291
10,	2.16	303	2.00	255	1.33	96	2.90	555	1.16	69	1.56	142	a 3.48	791	1.25	82	2.20	315	2.00	255	1.68	170	2.45	398
11,	2.24	327	2.05	270	1.30	90	2.60	450	2.00	255	1.46	122	2.00	255	1.25	82	2.72	492	2.20	315	1.65	162	3.10	635
12,	2.50	415	1.60	150	1.30	90	2.25	330	2.15	300	2.25	330	1.72	180	1.25	82	2.45	398	2.75	502	1.60	150	3.76	917
13,	4.10	1075	1.60	150	1.30	90	2.00	255	2.80	520	2.00	255	1.60	150	1.43	116	2.00	255	2.00	255	1.58	146	2.95	575
14,	6.80	2910	2.40	380	1.30	90	2.10	285	2.60	450	1.80	200	1.55	140	2.00	255	1.60	150	1.90	225	1.54	138	2.88	548
15,	4.55	1318	2.90	555	1.29	88	2.60	450	2.00	255	1.80	200	1.50	130	1.75	188	b13.52	10000	1.90	225	1.58	146	3.88	971
16,	2.85	538	2.75	502	1.12	63	2.25	330	1.80	200	1.78	195	1.38	100	1.90	225	4.00	1025	1.90	225	1.67	168	3.60	845
17,	2.55	432	2.50	415	1.12	63	1.90	225	1.80	200	1.84	210	1.34	98	1.70	175	3.50	800	2.49	412	2.08	279	3.10	635
18,	2.00	255	2.55	432	1.12	63	1.80	200	1.80	200	1.89	222	1.34	98	1.60	150	3.25	695	c4.30	1180	1.96	243	2.25	330
19,	1.98	249	2.64	464	1.68	170	1.85	212	1.80	200	1.90	225	1.34	98	1.60	150	2.50	415	2.25	330	1.66	165	1.95	240
20,	2.15	300	2.24	327	1.13	64	2.65	468	1.60	150	1.90	225	1.56	142	1.57	144	2.00	255	1.95	240	1.64	160	3.00	595
21,	2.64	464	2.12	291	1.14	66	2.45	398	1.60	150	1.88	220	1.82	205	1.54	138	1.75	188	1.90	225	1.62	155	3.25	695
22	2.30	345	1.75	188	1.15	68	3.65	868	1.60	150	1.80	200	1.80	200	1.54	138	1.70	175	2.18	309	1.75	188	2.70	485
23,	2.26	333	2.00	255	1.15	68	2.90	555	1.60	150	1.76	190	1.86	215	1.51	132	1.67	168	2.00	255	1.68	170	2.65	468
24,	2.20	315	2.05	270	1.15	68	2.60	450	1.60	150	1.70	175	1.86	215	1.53	136	1.50	130	1.90	225	1.60	150	2.22	321
25,	2.08	279	2.11	288	1.15	68	2.55	432	1.60	150	1.65	162	1.84	210	1.54	138	1.50	130	1.86	215	1.58	146	1.96	243
26,	2.34	359	2.34	359	1.31	92	2.00	255	1.60	150	1.60	150	1.84	210	1.56	142	1.50	130	1.86	215	2.10	285	1.92	231
27,	2.80	520	2.23	324	1.32	94	1.80	200	1.58	146	1.57	144	1.80	200	1.55	140	1.88	220	1.84	210	2.08	279	1.90	225
28,	3.88	971	2.18	309	1.27	86	1.80	200	1.52	134	1.55	140	1.77	192	1.58	146	1.83	208	1.84	210	2.04	267	1.86	215
29,	3.00	595	......	......	1.25	82	1.90	225	1.58	146	1.52	134	1.75	188	1.69	172	2.25	330	1.80	200	2.00	255	1.84	210
30,	*2.90	555	......	......	1.28	87	2.35	362	2.05	270	1.52	134	1.50	130	1.82	205	2.00	255	1.75	188	2.00	255	1.80	200
31,	*2.80	520	......	......	1.25	82	......	......	2.00	255	......	......	1.50	130	1.79	198	......	......	1.70	175	......	......	1.80	200

*Interpolated—Backwater.
a Maximum 5.75 feet at 4.45 P. M.=2040 sec. ft.
b Maximum 14.25 feet at noon=10768 sec. ft.
c Maximum 5.10 feet at 8.30 A. M.=4480 sec. ft.

ESTIMATED MONTHLY DISCHARGE OF TURTLE CREEK, AT EAST PITTSBURG, ALLEGHENY COUNTY.

(Drainage area 145 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1907.					
December,	2422	27	262	1.807	2.083
1908.					
January,	575	75	192	1.324	1.526
February,	7040	90	580	4.000	4.314
March,	3510	200	653	4.505	5.194
June,	175	45	87	0.600	0.669
July,	82	15	43	0.297	0.342
August,	110	19	48	0.331	0.381
September,	41	12	25	0.172	0.192
October,	37	15	23	0.159	0.183
November,	41	15	25	0.172	0.192
December,	76	24	32	0.221	0.255
1909.					
January,	231	22	68	0.469	0.541
February,	1925	52	322	2.221	2.313
March,	1252	106	286	1.972	2.273
April,	751	94	270	1.862	2.077
May,	1433	37	189	1.303	1.502
June,	401	30	73	0.503	0.561
July,	52	14	25	0.172	0.198
August,	134	19	34	0.234	0.270
September,	62	17	24	0.166	0.186
October,	102	10	34	0.234	0.270
November,	34	22	28	0.193	0.215
December,	126	15	34	0.234	0.270
The year,	1925	10	116	0.797	10.676
1910.					
January,	7450	32	675	4.655	5.366
February,	2640	48	428	2.956	3.074
March,	1025	45	176	1.214	1.400
April,	1235	37	120	0.828	0.924
May,	110	32	58	0.400	0.461
June,	175	31	54	0.372	0.415
July,	128	26	36	0.248	0.286
August,	27	14	22	0.152	0.175
September,	240	13	54	0.372	0.415
October,	134	19	71	0.490	0.565
November,	108	37	70	0.483	0.539
December,	1152	70	216	1.490	1.718
The year,	7450	13	165	1.138	15.338
1911.					
January,	2910	243	520	3.586	4.134
February,	555	150	339	2.338	2.435
March,	306	63	115	.793	.914
April,	868	72	372	2.566	2.863
May,	520	69	212	1.462	1.685
June,	330	122	185	1.276	1.424
July,	2040	43	161	1.110	1.280
August,	255	82	143	.986	1.137
September,	10768	100	634	4.372	4.878
October,	4480	175	335	2.310	2.663
November,	285	138	190	1.310	1.462
December,	971	175	391	2.697	3.109
The year,	10768	43	300	2.067	27.984

YOUGHIOGHENY RIVER

DESCRIPTION OF BASIN.

The Youghiogheny river, the largest tributary of the Monongehela river, drains an area of approximately 1,800 square miles in Maryland, West Virginia and Pennsylvania, of which about 1,265 square miles lie in Pennsylvania. Rising near the Maryland-West Virginia boundary line, in Preston county, West Virginia, to the north of the headwaters of the Potomac river, and upon the western side of Great Savage Mountain, its course is almost due north, roughly paralleling the Monongahela river, between Negro Mountain, on the east, and Briary Mountain, on the west, crossing the state line near Watsondale, at the junction of Fayette and Somerset counties.

On the upper reaches of this river the grade is steep, but the valley is open and rolling. It soon becomes more mountainous, however, and the stream flows between high, steep hills, ending abruptly at the water's edge, the channel being strewn with numerous boulders and large stones. The river continues northward in this manner, gradually loosing its swiftness, but still retaining the hilly nature, to Somerfield, Pa., two miles above the state line, where the slope of the stream is more uniform and continues as such to its junction with the Casselman river. From Confluence, where it is joined by its largest tributary, Casselman river, to its mouth, the river follows a general northwesterly direction, the valley being narrow and steep, and to Bidewell the stream flows at a fairly uniform grade, gradually developing into rapids with the valley assuming a more gorge like form. Just above Ohiopyle the stream becomes very rapid, assuming its greatest fall as it makes a long loop around the mountain. Between Connellsville and West Newton the stream cuts through a succession of ridges, alternating with rolling country on either side, and from this point to its mouth the valley is wide and rolling.

The total length of this river is about 125 miles, of which approximately 83 miles lie in Pennsylvania. The elevation of the source is approximately 3,000 feet, and at the point where the Youghiogheny enters Pennsylvania the elevation is 1,400 feet, giving a fall of about 38 feet per mile in this distance. From the state line to Connellsville the fall is at the rate of approximately 17 feet per mile, and from Connellsville to its mouth, 43 miles, the rate is 3.5 feet per mile. Between Ohiopyle and Connellsville, a distance of 17.5 miles, the rate of fall is 19 feet per mile, reaching at Ohiopyle Falls a rate of over 50 feet per mile.

The principal tributaries of the Youghiogheny river in Pennsylvania are Big Sewickley creek, Indian creek and the Casselman river. There are many tributaries in Maryland and West Virginia, the principal being Bear creek, Deep creek, Little Youghiogheny and Rhine creek.

The headwaters of this stream and the basin of it as far down as Connellsville is sparsely inhabited, well covered with second growth timber, with some farming and coal mining carried on. From Connellsville to the mouth the watershed is densely inhabited, especially in the valleys, which are industrially very active, the surrounding hills being practically deforested, while considerable farming is carried on. The region is the center of the vast bituminous coal producing and coke making belt and the streams are laden with mine water and sulphur. Four large boroughs and many large villages lie in this area, some of the communities obtaining a domestic water supply from the stream.,

Navigation of the Youghiogheny river was at one time improved by the construction of dams and locks, from McKeesport, at its mouth, to West Newton, 19 miles above. Since 1868, however, this navigation has been abandoned, and all dams and locks removed from the river.

The mean annual precipitation over the lower portion of this watershed is from 35 to 40 inches; the central portion, from 45 to 50 inches, while the upper portion is subject to a rainfall of from 40 to 45 inches.

The discharge has been measured at Friendsville, Md., Confluence, Pa., and at Connellsville, Pa., since August 17, 1898, September 15, 1904, and July 22, 1908, respectively, the former, however, being discontinued on December 31, 1904.

OHIO BASIN—STATION NO. 28.

YOUGHIOGHENY RIVER AT FRIENDSVILLE, MD.

DESCRIPTION OF STATION.

This station was established on August 17, 1898, by the United States Geological Survey and was discontinued on December 31, 1904. It was situated on the iron highway bridge at Friendsville, Garrett county, Md., about 86 miles above the mouth.

The channel is straight for several hundred feet above and below the station. The bed is rocky and the banks are high and not subject to overflow.

Discharge measurements were taken from the upstream side of the bridge, the initial point for soundings being a point 15 feet back from the face of the right abutment, on upstream side of bridge.

A standard chain gage was attached to the guard-rail of the right span, upstream side. The length of the chain from the bottom of the weight to the marker was 20 feet. The elevation of zero was arbitrary datum. Bench mark No. 1 consisted of an aluminum tablet disc marked "1501" and was set in the foundation corner stone of the southeast corner of Friend's Store; elevation 33.17 feet above gage datum. The gage was read twice daily by J. H. Cuppet.

During the operation of this station 14 discharge measurements were made. More measurements have been made, however, by F. W. Scheidenhelm, of Connellsville, Pa., but the data on these individual measurements are not available.

DISCHARGE MEASUREMENTS OF YOUGHIOGHENY RIVER, AT FRIENDSVILLE, MD.

(Drainage area 295 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1898.							
1	May 12,	Paul,		410	1.39	4.90	571	
2	Aug. 17,	do.		412	1.41	4.90	581	
	1899.							
3	Jan. 24,	Paul,		475	2.02	5.40	959	
4	Jan. 25,	do.		600	3.42	6.35	2,050	
5	May 17,	do.		556	3.05	5.97	1,697	
6	June 30,	do.		484	1.95	5.40	944	
	1900.							
7	Feb. 15,	Paul,		557	3.26	6.20	1,816	
8	June 26,	do.		335	1.08	4.60	361	
9	Sept. 13,	Olberg,		243	0.20	3.80	48	
	1901.							
10	July 27,					4.10	132	
11	Nov. 3,					3.90	89	
	1902.							
12	Aug. 22,	Hayes,				4.40	208	
	1903.							
13	Sept. 3,	Paul & Sawyer,		283	0.44	4.10	124	
	1904.							
14	July 7,	Hoyt & Hall,	145	344	0.46	4.30	157	

Note.—Individual measurements made by F. W. Scheidenhelm, Connellsville, Pa. since this date, but the data is not available.

DISCHARGE TABLE FOR YOUGHIOGHENY RIVER, AT FRIENDSVILLE, MD., FROM AUG. 18, 1898, TO DEC. 31, 1899.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec-ft.	Feet.	Sec-ft.	Feet.	Sec-ft.	Feet.	Sec-ft.	Feet.	Sec-ft.
3.90	245	.90	575	.90	1486	.80	2512	.70	3538
4.00	260	5.00	640	6.00	1600	.90	2626	.80	3652
.10	275	.10	710	.10	1714	7.00	2740	.90	3766
.20	295	.20	785	.20	1828	.10	2854	8.00	3880
.30	320	.30	865	.30	1942	.20	2968	.10	3994
.40	350	.40	955	.40	2056	.30	3082	.20	4108
.50	385	.50	1050	.50	2170	.40	3196	.50	4450
.60	425	.60	1150	.60	2284	.50	3310	9.00	5020
.70	470	.70	1260	.70	2398	.60	3424	.50	5590
.80	520	.80	1372						

DISCHARGE TABLE FOR YOUGHIOGHENY RIVER, AT FRIENDSVILLE, MD., FOR 1900 AND 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
3.60	20	.90	95	.30	255	.50	350	.70	455
.60	20	4.00	130	.40	300	.60	400	.80	515
.70	40	.10	170						
.80	65	.20	210						

NOTE—Above gage height 4.8 feet the rating table for three years is the same as the 1898-1899 table, here published.

DISCHARGE TABLE FOR YOUGHIOGHENY RIVER, AT FRIENDSVILLE, MD., FROM JAN. 1, 1902, TO DEC. 31, 1904.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
3.60	12	.50	280	.40	955	.30	1942	20	2938
.70	25	.60	340	.50	1050	.40	2056	.40	3196
.80	45	.70	400	.60	1150	.50	2170	.60	3424
.90	65	.80	464	.70	1260	.60	2284	.80	3652
4.00	90	.90	520	.80	1372	.70	2398	8.00	3880
.10	120	5.00	600	.90	1486	.80	2512	.50	4450
.20	150	.10	685	6.00	1600	.90	2626	9.00	5020
.30	185	.20	770	.10	1714	7.00	2740	.50	5590
.40	230	.30	862	.20	1828				

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YOUGHIOGHENY RIVER, AT FRIENDSVILLE, MD.

1898. Day.	AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	-----	-----	4.20	295	4.00	260	4.90	575	4.90	575
2,	-----	-----	4.10	275	4.00	260	4.90	575	4.90	575
3,	-----	-----	4.10	275	4.00	260	4.80	520	4.80	520
4,	-----	-----	4.10	275	4.00	260	4.70	470	4.70	470
5,	-----	-----	4.10	275	4.00	260	4.70	470	4.70	470
6,	-----	-----	4.30	320	4.10	275	4.80	520	4.70	470
7,	-----	-----	4.40	350	4.20	295	4.70	470	4.70	470
8,	-----	-----	4.50	385	4.20	295	4.90	575	4.70	470
9,	-----	-----	4.40	350	4.20	295	5.10	710	4.70	470
10,	-----	-----	4.40	350	4.10	275	5.10	710	4.80	520
11.	-----	-----	4.10	275	4.10	275	6.30	1942	4.90	575
12,	-----	-----	4.00	260	4.10	275	5.90	1486	5.10	710
13,	-----	-----	4.00	260	4.10	275	5.70	1260	5.10	710
14,	-----	-----	4.00	260	4.20	295	5.50	1050	5.10	710
15,	-----	-----	4.00	260	4.20	295	5.40	955	5.20	785
16,	-----	-----	4.00	260	4.30	320	5.30	865	5.20	785
17,	4.90	575	4.00	260	4.20	295	5.20	785	5.20	785
18,	4.80	520	4.00	260	4.40	350	5.20	785	5.10	710
19,	4.70	470	4.00	260	4.40	350	5.20	785	5.10	710
20,	5.90	1486	4.00	260	4.90	575	5.70	1260	6.10	1714
21,	5.20	785	4.00	260	4.70	470	5.60	1150	7.50	3310
22,	4.90	575	4.00	260	7.90	3706	5.40	955	7.60	3424
23,	4.70	470	4.00	260	7.00	2740	5.40	955	7.70	3528
24,	4.60	425	4.40	260	6.10	1714	5.20	785	7.10	2854
25,	4.60	425	4.30	320	5.60	1150	5.10	710	6.50	2170
26,	4.50	385	4.30	320	5.60	1150	5.00	640	5.60	1150
27,	4.50	385	4.20	295	5.50	1050	4.80	520	5.60	1150
28,	4.40	350	4.00	260	5.30	865	4.90	575	5.60	1150
29,	4.30	320	4.00	260	5.10	710	4.80	520	5.40	955
30,	4.20	295	4.00	260	5.00	640	4.80	520	5.30	865
31,	4.20	295	-----	-----	5.00	640	-----	-----	5.20	785

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YOUGHIOGHENY RIVER AT FRIENDSVILLE, MARYLAND.

1899.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.20	785	5.00	640	6.50	2170	6.50	2170	4.60	425	4.90	575	5.20	785	4.50	385	4.00	260	4.10	275	4.10	275	4.30	320
2,	5.20	785	4.90	575	6.40	2056	6.30	1942	5.00	640	4.90	575	4.80	520	4.30	320	4.10	275	4.10	275	4.60	425	4.30	320
3,	5.20	785	5.00	640	6.30	1942	6.00	1600	5.20	785	4.80	520	4.60	425	4.20	295	4.00	260	4.10	275	5.00	640	4.00	320
4,	5.40	955	7.40	3196	6.30	1942	5.80	1372	5.30	865	4.80	520	4.40	350	4.20	295	4.00	260	4.10	275	4.80	520	4.30	320
5,	6.50	2170	7.00	2740	7.70	3538	5.30	865	5.30	865	4.80	520	4.60	425	4.60	425	3.90	245	4.00	260	4.50	385	4.30	320
6,	6.30	1942	6.20	1828	8.20	4108	5.20	785	5.20	785	4.60	425	4.50	385	4.80	520	3.90	245	4.00	260	4.50	385	4.50	385
7,	6.10	1714	5.90	1486	6.60	1486	5.10	710	5.20	785	4.50	385	4.50	385	4.50	385	3.90	245	4.00	260	4.40	350	4.60	425
8,	6.00	1600	5.60	1150	6.20	2284	6.90	2626	5.10	710	4.50	385	4.50	385	4.30	320	4.10	275	4.00	260	4.30	320	4.60	425
9,	5.80	1372	5.40	955	5.90	1486	6.50	2170	6.90	2626	4.40	350	4.40	350	4.20	295	4.00	260	4.00	260	4.30	320	4.80	520
10,	5.60	1150	5.30	865	6.30	1942	5.90	1486	6.50	2170	5.20	785	4.40	350	4.20	295	4.40	350	4.00	260	4.40	350	4.90	575
11,	5.30	865	5.20	785	6.10	1714	5.70	1200	6.30	1942	5.90	1486	4.30	320	4.30	320	4.40	350	3.90	245	4.30	320	4.90	575
12,	5.20	785	5.10	710	6.00	1600	5.50	1050	5.90	1486	5.80	1372	4.20	295	4.20	295	4.30	320	3.90	245	4.20	295	5.40	955
13,	5.10	710	5.10	710	5.90	1486	5.30	805	5.60	1150	5.60	1150	4.20	295	4.20	295	4.30	320	3.90	245	4.20	295	5.80	1372
14,	6.10	1714	Froz.	------	5.70	1260	5.20	785	5.60	1150	5.60	1150	4.30	320	4.10	275	4.20	295	3.90	245	4.20	295	5.50	1050
15,	8.00	3880	"	------	5.60	1150	5.10	710	5.50	1050	5.70	1260	4.40	350	4.10	275	4.10	275	3.90	245	4.20	295	5.30	865
16,	7.10	2854	"	------	5.60	1150	5.10	710	5.60	1150	6.50	2170	4.60	425	4.10	275	4.10	275	3.90	245	4.10	275	5.10	710
17,	6.80	2512	"	------	5.70	1260	5.00	640	5.70	1260	6.20	1828	4.60	425	4.10	275	4.00	260	3.90	245	4.10	275	5.10	710
18,	6.50	2170	"	------	5.70	1260	5.00	640	8.00	3880	5.40	955	4.90	575	4.00	260	4.00	260	3.90	245	4.10	275	5.20	785
19,	6.20	1828	5.10	710	5.70	1260	5.00	640	9.50	5590	5.00	640	4.70	470	4.00	260	4.10	275	3.90	245	4.30	320	5.40	955
20,	5.80	1372	5.20	785	5.70	1260	4.90	575	7.20	2968	4.80	520	4.50	385	4.00	260	4.10	275	3.90	245	4.40	350	5.40	955
21,	5.50	1050	5.40	955	6.00	1600	4.90	575	6.90	2626	4.80	520	4.40	350	4.00	260	4.30	320	3.90	245	4.60	425	5.30	865
22,	5.40	955	6.80	2512	6.00	1600	4.80	520	6.50	2170	4.70	470	4.30	320	4.00	260	4.20	295	3.90	245	4.70	470	5.30	865
23,	5.30	865	7.20	2968	6.30	1942	4.70	470	6.10	1714	4.60	425	4.20	295	4.00	260	4.20	295	3.90	245	4.60	425	5.30	865
24,	5.30	865	6.40	2056	6.30	1942	4.70	470	5.60	1150	4.50	385	4.20	295	4.00	260	4.10	275	3.90	245	4.60	425	5.20	785
25,	6.40	2056	5.90	1486	6.00	1600	4.70	470	5.30	865	5.30	865	4.40	350	4.00	260	4.00	260	3.90	245	4.60	425	5.20	785
26,	6.00	1600	6.20	1828	5.80	1372	4.60	425	5.10	710	5.10	710	4.20	295	4.00	260	4.00	260	3.90	245	4.40	350	5.20	785
27,	5.70	1260	7.90	3766	5.60	1150	4.60	425	4.90	575	5.20	785	4.20	295	4.00	260	4.10	275	3.90	245	4.40	350	5.10	710
28,	5.50	1050	7.20	2968	6.60	2284	4.70	470	4.90	575	5.20	785	4.20	295	4.00	260	4.10	275	4.00	260	4.40	350	5.10	710
29,	5.30	865	------	------	8.00	3880	4.70	470	4.80	520	5.40	955	4.40	350	4.10	275	4.10	275	4.00	260	4.40	350	5.10	710
30,	5.10	710	------	------	7.30	3082	4.60	425	4.90	575	5.60	1150	4.30	320	4.10	275	4.10	275	4.00	260	4.30	320	5.10	710
31,	5.10	710	------	------	6.90	2626	------	------	4.90	575	------	------	4.30	320	4.00	260	------	------	------	------	------	------	5.10	710

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YOUGHIOGHENY RIVER AT FRIENDSVILLE, MARYLAND.

1900.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.10	710	4.80	515	6.30	1942	5.80	1372	4.60	400	4.30	255	4.80	515	4.70	455	4.00	130	3.90	95	4.10	170	5.30	865
2,	5.10	710	4.80	515	6.80	2512	5.80	1372	4.60	400	4.30	255	4.80	515	4.50	350	4.00	130	3.90	95	4.10	170	5.20	785
3,	5.10	710	4.80	515	6.60	2284	5.80	1372	4.50	350	4.30	255	4.70	455	4.30	255	4.00	130	3.90	95	4.10	170	5.10	710
4,	5.10	710	4.80	515	6.30	1942	5.60	1150	4.50	350	4.40	300	4.80	515	4.20	210	4.00	130	3.90	95	4.40	300	5.30	865
5,	5.10	710	4.80	515	6.20	1828	5.50	1050	4.50	350	4.30	255	4.60	400	4.20	210	4.00	130	3.90	95	4.30	255	5.60	1150
6,	5.10	710	5.40	955	6.30	1942	5.50	1050	4.60	400	4.30	255	4.40	300	4.20	210	4.00	130	3.90	95	4.20	210	5.80	1372
7,	5.20	785	5.60	1150	6.10	1714	5.50	1050	4.60	400	4.20	210	4.30	255	4.10	170	4.00	130	3.90	95	4.20	210	7.50	3310
8,	5.30	865	6.60	2284	6.00	1600	5.40	955	4.70	455	4.20	210	*4.30	255	4.10	170	3.90	95	3.90	95	4.20	210	7.30	3082
9,	5.30	865	6.80	2512	5.80	1372	5.40	955	4.70	455	4.20	210	4.30	255	4.00	130	3.90	95	3.90	95	4.40	300	6.90	2626
10,	5.30	865	6.60	2284	5.70	1260	5.30	865	4.60	400	4.20	210	4.20	210	4.00	130	3.90	95	3.90	95	4.30	255	6.40	2056
11,	5.40	955	6.40	2056	5.60	1150	5.30	865	4.50	350	4.10	170	4.20	210	4.00	130	3.90	95	3.90	95	4.30	255	6.10	1714
12,	6.30	1942	6.20	1828	5.50	1050	5.20	785	4.60	400	4.10	170	4.10	170	4.00	130	3.90	95	3.90	95	4.30	255	5.80	1372
13,	6.30	1942	6.30	1942	5.30	865	5.10	710	4.70	455	4.20	210	4.10	170	4.00	130	3.90	95	3.90	95	4.30	255	5.60	1150
14,	6.00	1600	6.40	2056	5.30	865	5.00	640	4.70	455	4.50	350	4.10	170	4.00	130	3.90	95	4.10	170	4.30	255	5.40	955
15,	5.80	1372	6.30	1942	5.30	865	5.00	640	4.80	515	4.70	455	4.10	170	4.10	170	3.90	95	4.30	255	4.20	210	5.40	955
16,	5.80	1372	6.10	1714	5.40	955	4.90	575	4.90	575	5.40	955	4.10	170	4.20	210	3.80	65	4.30	255	4.20	210	5.30	865
17,	5.60	1150	5.80	1372	5.30	865	4.90	575	4.90	575	6.70	2398	4.00	130	4.50	350	3.80	65	4.20	210	4.20	210	5.20	785
18,	5.60	1150	5.60	1150	5.50	1050	4.80	515	4.80	515	7.10	2854	4.00	130	4.50	350	3.80	65	4.20	210	4.30	255	5.10	710
19,	5.60	1150	5.20	785	5.70	1260	4.80	515	4.70	455	7.00	2740	4.00	130	4.40	300	3.80	65	4.20	210	4.40	300	4.90	575
20,	5.70	1260	5.10	710	5.90	1486	4.70	455	4.70	455	6.50	2170	4.10	170	4.30	255	3.80	65	4.10	170	4.40	300	4.70	455
21,	6.00	1600	5.10	710	7.00	2740	4.70	455	4.70	455	6.00	1600	4.10	170	4.20	210	3.80	65	4.20	210	4.50	350	4.60	400
22,	6.30	1942	5.00	640	6.50	2170	4.70	455	4.70	455	5.30	865	4.20	210	4.20	210	3.80	65	4.20	210	4.70	455	4.60	400
23,	6.10	1714	5.00	640	6.10	1714	4.60	400	4.70	455	4.80	515	4.30	255	4.60	400	3.80	65	4.10	170	4.80	515	4.50	350
24,	5.70	1260	5.00	640	5.80	1372	4.60	400	4.60	400	4.70	455	4.30	255	4.20	210	3.80	65	4.00	130	4.90	575	4.30	255
25,	5.50	1050	5.00	640	5.60	1150	4.70	455	4.50	350	4.70	455	4.40	300	4.30	255	3.80	65	4.00	130	5.20	785	4.30	255
26,	5.40	955	5.00	640	5.50	1050	4.70	455	4.40	300	4.60	400	4.70	455	4.30	255	3.80	65	4.00	130	9.50	5590	4.40	300
27,	5.30	865	5.10	710	5.40	955	4.80	515	4.40	300	4.50	350	5.00	640	4.10	170	3.90	95	4.10	170	8.30	4222	4.60	400
28,	5.20	785	5.10	710	5.40	955	4.80	515	4.40	300	4.60	400	4.60	400	4.10	170	3.90	95	4.20	210	6.90	2626	4.80	515
29,	5.00	640	------	------	5.50	1050	4.70	455	4.40	300	4.80	515	4.70	455	4.20	210	3.90	95	4.10	170	5.80	1372	5.00	640
30,	5.00	640	------	------	5.70	1260	4.70	455	4.40	300	4.90	575	4.90	575	4.10	170	3.90	95	4.10	170	5.50	1050	5.20	785
31,	5.00	640	------	------	5.70	1260	------	------	4.40	300	------	------	5.50	1050	4.10	170	------	------	4.10	170	------	------	5.20	785

*Interpolated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YOUGHIOGHENY RIVER AT FRIENDSVILLE, MARYLAND.

1904.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.00	640	5.00	600	5.00	600	5.30	865	5.50	1050	6.30	1942	4.40	300	4.00	130	4.10	170	3.90	95	3.90	95	4.40	300
2,	4.90	575	5.00	600	5.00	*600	5.30	865	5.30	865	5.80	1372	4.30	255	4.00	130	4.00	130	3.90	95	3.90	95	4.70	455
3,	4.90	575	5.00	600	6.90	2620	5.40	955	5.20	785	5.40	955	4.20	210	4.00	130	4.00	130	3.90	95	3.90	95	5.60	1150
4,	4.90	575	5.00	600	6.70	2398	5.90	1486	5.00	640	5.20	785	4.20	210	4.00	130	4.00	130	3.90	95	3.90	95	6.90	2626
5,	4.90	575	5.00	600	6.50	2170	5.20	1828	5.00	640	5.00	640	4.20	210	4.00	130	4.00	130	3.90	95	3.90	95	6.40	2056
6,	4.90	575	5.00	600	6.40	2056	7.50	3310	4.90	575	5.20	785	4.20	210	4.10	170	4.00	130	3.90	95	3.90	95	6.40	2056
7,	4.90	575	5.00	600	6.10	1714	8.40	4336	4.70	455	5.20	785	4.10	170	4.10	170	3.90	95	3.90	95	3.90	95	6.10	1714
8,	4.90	575	5.00	600	5.70	1260	8.00	3880	4.60	400	5.80	1372	4.10	170	4.10	170	3.90	95	3.90	95	3.90	95	6.00	1600
9,	4.90	575	5.00	600	6.40	2056	7.60	2740	4.80	515	5.60	1150	4.00	130	4.10	170	3.90	95	3.90	95	3.90	95	5.30	865
10,	5.20	785	5.00	600	8.50	4450	6.60	2284	5.00	640	5.20	785	4.00	130	4.00	130	3.90	95	3.90	95	3.90	95	6.30	1942
11,	5.70	1260	5.00	600	8.20	4108	6.50	2140	5.80	1372	5.00	640	4.00	130	4.00	130	4.10	170	3.90	95	4.00	130	6.00	1600
12,	5.90	1486	5.00	600	7.60	3424	6.40	2056	5.90	1486	4.90	575	4.10	170	4.10	170	4.10	170	3.90	95	4.00	130	5.80	1372
13,	6.30	1942	5.00	600	7.10	2854	6.30	1942	5.80	1372	4.80	515	4.10	170	4.20	210	4.20	210	3.90	95	4.10	170	5.40	955
14,	5.90	1486	5.00	600	6.90	2626	6.30	1942	5.70	1260	4.80	515	4.10	170	4.30	255	4.30	255	3.90	95	4.10	170	7.30	3082
15,	5.70	1260	5.00	600	6.70	2398	6.30	1942	5.60	1150	5.00	640	4.10	170	4.20	210	4.30	255	4.00	130	4.00	130	9.30	5362
16,	5.50	1050	5.00	600	6.60	2284	6.10	1714	5.60	1150	5.40	955	4.20	210	4.10	170	4.40	300	4.00	130	4.00	130	7.80	3652
17,	5.40	955	5.00	600	6.40	2056	6.00	1600	5.50	1050	5.10	710	5.20	785	4.10	170	4.40	300	4.00	130	4.00	130	7.40	3196
18,	5.10	710	5.00	600	6.20	1828	5.90	1486	5.40	955	5.00	640	5.10	710	4.10	170	4.30	255	4.00	130	4.00	130	6.70	2398
19,	4.90	575	5.00	600	5.90	1486	5.80	1372	5.20	785	4.90	575	4.80	515	4.20	210	4.20	210	4.00	130	4.00	130	5.40	955
20,	4.90	575	5.00	600	5.80	1372	5.90	1486	5.10	710	4.70	455	4.30	255	4.20	210	4.20	210	4.00	130	4.10	170	5.00	640
21,	5.30	865	5.00	600	5.70	1260	7.80	3652	5.00	640	4.70	455	4.20	210	4.20	210	4.10	170	4.00	130	4.20	210	4.90	575
22,	5.20	785	5.00	600	5.60	1150	7.50	3310	5.00	640	4.70	455	4.10	170	4.30	255	4.10	170	4.00	130	4.30	255	4.80	515
23,	5.20	785	5.00	600	5.50	1050	7.10	2854	5.10	710	4.60	400	4.10	170	4.40	300	4.00	130	4.00	130	4.40	300	4.80	515
24,	5.10	710	5.00	600	5.40	955	6.00	2512	5.10	710	4.50	350	4.20	210	4.60	400	4.00	130	3.90	95	4.40	300	4.80	515
25	5.10	710	5.00	600	5.40	955	6.60	2284	5.20	785	4.50	350	4.10	170	4.40	300	4.00	130	3.90	95	4.40	300	4.90	575
26,	5.10	710	5.00	600	5.30	865	6.40	2056	5.90	1486	4.40	300	4.10	170	4.30	255	4.00	130	3.90	95	4.40	300	4.90	575
27,	5.00	*600	5.00	600	5.30	865	6.10	1714	7.00	2740	4.60	400	4.10	170	4.20	210	3.90	95	3.90	95	4.40	300	4.90	575
28,	5.00	600	5.00	600	6.00	1600	6.10	1714	7.30	3082	4.80	515	4.10	170	4.20	210	3.90	95	3.90	95	4.40	300	4.50	350
29,	5.00	600	------	------	5.80	1372	5.90	1486	7.10	2854	4.60	400	4.10	170	4.10	170	3.90	95	3.90	95	4.30	255	7.20	2968
30,	5.00	600	------	------	5.60	1150	5.70	1260	6.80	2512	4.50	350	4.00	130	4.10	170	3.90	95	3.90	95	4.50	350	7.80	3652
31,	5.00	600	------	------	5.40	955	------	------	6.50	2170	------	------	4.00	130	4.10	170	------	------	3.90	95	------	------	6.70	2398

*River frozen discharge estimated from Jan. 27 to March 2.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YOUGHIOGHENY RIVER AT FRIENDSVILLE, MARYLAND.

1902. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.00	1600	5.60	1150	10.02	6183	5.30	862	4.90	530	5.00	600	6.80	2512	4.50	280	3.90	65	4.20	150	4.20	150	5.80	1372
2,	5.80	1372	5.40	955	8.80	4792	5.40	955	4.90	530	4.80	464	6.70	2398	4.60	340	3.90	65	4.20	150	4.20	150	5.80	1372
3,	5.40	955	5.20	770	8.10	3994	5.60	1150	4.80	464	4.70	400	6.70	2398	4.90	530	3.90	65	4.30	185	4.20	150	5.90	1486
4,	5.40	955	5.10	685	6.30	1942	5.70	1260	4.70	400	4.60	340	6.60	2284	4.80	464	3.90	65	4.40	230	4.10	120	5.90	1486
5,	5.30	862	5.00	600	6.10	1714	6.40	2056	4.70	400	4.50	280	6.00	1600	4.50	280	3.80	45	4.30	185	4.10	120	5.80	1372
6,	5.20	770	5.00	600	5.90	1486	6.40	2056	4.60	340	4.50	280	5.10	685	4.40	230	3.80	45	4.30	185	4.10	120	5.80	1372
7,	5.00	600	5.00	600	5.70	1260	6.50	2170	4.60	340	4.50	280	4.80	464	4.30	185	3.90	65	4.30	185	4.20	150	5.90	1486
8,	5.00	600	5.00	600	5.50	1050	6.60	2281	4.60	340	4.50	280	4.60	390	4.30	185	3.90	65	4.20	150	4.20	150	5.70	1260
9,	4.90	530	5.00	600	5.40	955	6.60	2284	4.60	340	4.50	280	4.80	464	4.20	150	3.90	65	4.20	150	4.20	150	5.60	1150
10,	4.80	464	5.00	600	5.60	1150	6.50	2170	4.60	340	4.40	230	5.00	600	4.20	150	3.90	65	4.40	230	4.20	150	5.60	1150
11,	4.80	464	5.00	600	6.20	1828	7.40	3196	4.50	280	4.30	185	4.90	530	4.20	150	3.90	65	4.40	230	4.20	150	5.50	1050
12,	4.80	464	5.00	600	7.10	2854	8.20	4108	4.50	280	4.30	185	4.70	400	4.20	150	3.90	65	5.30	862	4.20	150	8.50	4450
13,	4.80	464	5.00	600	8.50	4450	7.80	3652	4.50	280	4.50	280	4.50	280	4.10	120	3.80	45	5.30	862	4.20	150	7.90	3766
14,	4.80	464	5.00	600	8.10	3994	7.40	3196	4.50	280	4.50	280	4.40	230	4.10	120	3.80	45	5.00	600	4.20	150	7.50	3310
15,	4.70	400	5.00	600	7.80	3652	7.10	2854	4.40	230	4.60	340	4.30	185	4.10	120	3.80	45	5.00	600	4.20	150	7.30	3082
16,	4.70	400	5.00	600	7.30	3082	6.70	2398	4.40	230	4.70	400	4.30	185	4.10	120	3.80	45	4.70	400	4.20	150	8.20	4108
17,	4.70	400	5.00	600	6.90	2626	6.80	2512	4.40	230	4.70	400	4.30	185	4.10	120	3.80	45	4.60	340	4.20	150	8.60	4564
18,	4.80	464	5.00	600	6.40	2056	6.80	2512	4.50	280	4.70	400	4.50	280	4.10	129	3.80	45	4.60	340	4.20	150	8.30	4222
19,	4.90	530	5.00	600	6.10	1714	6.60	2284	4.80	464	4.60	340	4.70	400	4.20	150	3.80	45	4.50	280	4.20	150	8.00	3880
20,	5.00	600	5.00	600	5.90	1486	6.30	1942	4.90	530	4.60	340	4.80	464	4.30	185	3.80	45	4.50	280	4.10	120	7.30	3082
21,	5.00	600	5.00	600	5.60	1150	5.80	1372	4.70	400	4.60	340	4.70	400	4.40	230	3.90	65	4.40	230	4.10	120	6.50	2170
22,	5.00	600	5.00	600	5.50	1050	5.40	955	4.80	464	4.50	280	4.60	340	4.40	230	3.90	65	4.40	230	4.10	120	6.10	1714
23,	5.00	600	5.00	600	5.40	955	5.20	770	5.00	600	4.50	280	4.40	230	4.40	230	3.90	65	4.20	150	4.30	185	6.10	1714
24,	5.40	955	5.00	600	5.30	862	5.00	600	5.30	862	4.60	340	4.20	150	4.30	185	3.90	65	4.20	150	4.50	280	6.00	1600
25,	5.60	1150	5.00	600	5.20	770	4.80	464	5.60	1150	4.80	464	4.20	150	4.20	150	4.00	90	4.10	120	5.40	955	6.00	1600
26,	7.10	2854	7.40	3196	5.10	685	4.70	400	5.70	1260	4.80	464	4.20	150	4.00	90	4.00	90	4.10	120	6.20	1828	5.90	1486
27,	7.30	3082	6.50	2170	5.10	685	4.70	400	5.80	1372	4.90	530	4.40	230	4.00	90	4.00	90	4.20	150	6.00	1600	5.80	1372
28,	6.90	2626	7.30	3082	5.00	600	4.70	400	5.80	1372	4.70	400	4.50	280	3.90	65	4.00	90	4.40	230	6.00	1600	5.50	1050
29,	6.30	1942	------	------	5.10	685	4.80	464	5.30	862	4.90	530	4.60	340	3.90	65	4.00	90	4.40	230	6.00	1600	5.30	862
30,	6.00	1600	------	------	5.10	685	4.90	530	5.30	862	5.70	1260	4.50	280	3.90	65	4.00	90	4.50	280	6.00	1600	5.20	770
31,	5.80	1372	------	------	5.10	685	------	------	5.20	770	------	------	4.50	280	3.90	65	------	------	4.30	185	------	------	5.10	685

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YOUGHIOGHENY RIVER AT FRIENDSVILLE, MARYLAND.

1903. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.00	600	7.80	3652	7.50	3310	5.20	770	4.80	464	5.20	770	6.20	1828	4.40	230	4.20	150	3.70	25	3.90	65	a4.30	------
2,	6.00	1600	7.50	3310	7.00	2740	5.30	862	4.90	530	5.20	770	5.80	1372	4.50	280	4.10	120	3.70	25	3.90	65	4.30	------
3.	6.80	2512	7.40	3196	6.50	2170	5.20	770	4.90	530	5.20	770	5.50	1050	4.30	185	4.10	120	3.70	25	4.00	90	4.30	------
4,	7.80	3652	8.00	3880	6.10	1714	5.20	770	4.90	530	5.30	862	5.50	1050	4.20	150	4.10	120	4.00	90	4.00	90	4.30	------
5,	6.90	2626	8.00	3880	5.80	1372	5.20	770	4.90	530	5.30	862	5.50	1050	4.30	185	4.00	90	4.20	150	4.00	90	4.30	------
6,	6.30	1942	7.00	2740	5.80	1372	5.30	862	4.80	464	5.40	955	5.40	955	4.30	185	4.00	90	4.30	185	4.00	90	4.30	------
7	5.90	1486	6.20	1828	5.80	1372	5.50	1050	4.70	400	5.50	1050	5.30	862	4.30	185	4.00	90	4.50	280	4.00	90	4.30	------
8,	5.40	955	6.00	1600	5.90	1486	5.80	1372	4.70	400	5.50	1050	5.20	770	4.20	150	4.10	120	4.50	280	4.00	90	4.30	------
9,	5.00	600	6.00	1600	6.00	1600	7.00	2740	4.50	280	5.10	685	5.30	862	4.20	150	4.10	120	4.80	464	4.00	90	4.30	------
10,	5.20	770	5.80	1372	6.00	1600	6.80	2512	4.50	280	4.80	464	5.40	955	4.10	120	4.10	120	4.60	340	4.00	90	4.30	------
11,	5.80	1372	5.20	770	6.20	1828	6.40	2056	4.40	230	5.00	600	5.50	1050	4.10	120	4.00	90	4.50	280	4.00	90	4.30	------
12,	5.70	1260	5.20	770	7.00	2740	6.00	1600	4.40	230	5.20	770	5.60	1150	4.10	120	4.00	90	4.30	185	4.20	150	4.30	------
13,	5.50	1050	6.00	1600	7.50	3310	5.60	1150	4.40	230	6.00	1600	5.50	1050	4.10	120	4.00	90	4.30	185	4.60	340	4.30	------
14,	5.40	955	5.80	1372	6.90	2626	5.60	1150	4.40	230	6.60	2284	5.50	1050	4.10	120	4.00	90	4.20	150	4.70	400	4.30	------
15,	5.20	770	6.50	2170	6.00	1600	5.60	1150	4.30	185	6.80	2512	5.40	955	4.00	90	4.00	90	4.20	150	4.90	530	4.30	------
16,	5.10	685	9.00	5020	5.20	770	5.50	1050	4.30	185	6.70	2398	5.20	770	4.10	120	3.90	65	4.20	150	5.00	600	4.30	------
17,	5.00	600	8.50	4450	5.20	770	5.50	1050	4.30	185	6.40	2056	5.10	685	4.10	120	3.90	65	4.30	185	5.60	1150	4.30	------
18,	5.00	600	6.50	2170	5.20	770	5.50	1050	4.20	150	6.40	2056	5.20	770	4.20	150	3.90	65	4.20	150	5.20	770	4.30	------
19,	5.00	600	6.20	1828	5.20	770	5.50	1050	4.20	150	6.20	1828	5.10	685	4.30	185	3.90	65	4.10	120	4.90	530	4.30	------
20,	4.90	530	5.90	1486	5.10	685	5.40	955	4.20	150	6.10	1714	5.30	862	4.30	185	3.90	65	4.10	120	4.70	400	4.30	------
21,	4.70	400	5.50	1050	5.10	685	5.30	862	4.60	340	6.20	1828	5.20	770	4.20	150	3.80	45	4.10	120	4.60	340	4.30	--
22,	4.70	400	5.50	1050	5.80	1372	5.30	862	4.80	464	6.00	1600	5.20	770	4.30	185	3.80	45	4.10	120	4.50	280	4.30	------
23,	4.80	464	5.30	862	6.20	1828	5.20	770	5.00	600	6.30	1942	5.10	685	4.20	150	3.80	45	4.10	120	4.50	280	4.30	------
24,	4.80	464	5.10	685	8.20	4108	5.00	600	5.20	770	6.40	2056	4.90	530	4.10	120	3.80	45	4.00	90	4.40	230	4.30	------
25,	4.90	530	5.00	600	8.00	3880	5.00	600	5.30	862	6.40	2056	4.70	400	4.20	150	3.80	45	4.00	90	4.40	230	4.30	------
26,	5.00	600	5.20	770	6.00	1600	4.90	530	5.40	955	6.30	1942	4.60	340	4.30	185	3.80	45	4.00	90	4.40	230	4.30	------
27,	5.30	862	5.90	1486	5.80	1372	4.80	464	5.50	1050	7.10	2854	4.50	280	4.40	230	3.80	45	4.00	90	4.30	185	4.30	------
28,	5.70	1260	8.00	3880	5.50	1050	4.80	464	5.30	862	7.40	3196	4.30	185	4.50	280	3.80	45	4.00	90	4.30	185	4.30	------
29,	7.20	2968	------	------	5.40	955	4.80	464	5.40	955	8.50	4450	4.20	150	4.40	230	3.70	25	4.00	90	4.30	185	4.30	------
30,	8.30	4222	------	------	5.40	955	4.70	400	5.30	862	7.90	3766	4.20	150	4.30	185	3.70	25	4.00	90	a 4.30	185	a 4.30	------
31,	8.00	3880	------	------	5.30	862	------	------	5.20	770	------	------	4.30	185	4.20	150	------	------	3 90	65	------	------	------	------

a To top of ice remainder of year.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YOUGHIOGHENY RIVER AT FRIENDSVILLE, MARYLAND.

1904. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.30	185	5.40	955	8.00	3880	5.70	1260	5.40	955	4.90	530	4.60	340	4.00	90	3.80	45	3.80	45	3.80	45	3.90	65
2,	4.30	185	5.10	685	7.60	3424	5.60	1150	5.30	862	4.90	530	4.50	280	4.00	90	3.80	45	3.80	45	3.80	45	3.90	65
3,	4.30	185	5.00	600	6.80	2512	5.50	1050	5.30	862	4.90	530	4.50	280	4.00	90	3.80	45	3.80	45	3.80	45	3.90	65
4,	4.30	185	4.80	464	6.40	2056	5.50	1050	5.30	862	4.90	530	4.40	230	4.00	90	3.80	45	3.80	45	3.80	45	3.90	65
5,	4.30	185	4.60	340	6.10	1714	5.30	862	5.20	770	4.80	464	4.50	280	4.10	120	3.80	45	3.80	45	3.80	45	3.90	65
6,	4.30	185	4.50	280	6.00	1600	5.10	685	5.10	685	4.80	464	4.40	230	4.00	90	3.80	45	3.80	45	3.80	45	3.90	65
7,	4.30	185	6.30	1942	5.90	1486	5.10	685	4.90	530	4.70	400	4.30	185	3.90	65	3.80	45	3.90	65	3.80	45	3.90	65
8,	4.30	185	6.00	1600	6.30	1942	5.20	770	4.80	464	4.90	530	4.40	230	3.90	65	3.80	45	3.90	65	3.80	45	3.90	65
9,	4.30	185	6.50	2170	6.60	2284	5.10	685	4.80	464	4.80	464	4.50	280	3.90	65	3.80	45	3.90	65	3.80	45	3.90	65
10,	4.30	185	6.30	1942	6.40	2056	5.00	600	4.70	400	4.70	400	4.50	280	3.90	65	3.80	45	3.90	65	3.80	45	3.90	65
11,	4.30	185	6.20	1828	6.20	1828	5.00	600	4.60	340	4.60	340	4.60	340	3.80	45	3.80	45	3.90	65	3.80	45	3.90	65
12,	4.30	185	5.90	1486	5.90	1486	4.90	530	4.60	340	4.50	280	4.50	280	3.80	45	3.80	45	3.90	65	3.80	45	3.90	65
13,	4.30	185	5.90	1486	5.70	1260	4.80	464	4.60	340	4.40	230	4.50	280	3.80	45	3.80	45	3.90	65	3.80	45	3.90	65
14,	4.30	185	5.90	1486	5.40	955	4.80	464	4.50	280	4.40	230	4.40	230	3.80	45	3.80	45	3.90	65	3.80	45	3.90	65
15,	4.30	185	5.90	1486	5.20	770	4.70	400	4.50	280	4.30	185	4.30	185	3.70	25	3.80	45	3.90	65	3.80	45	3.90	65
16,	4.30	185	5.90	1486	5.00	600	4.80	464	4.40	230	4.30	185	4.20	150	3.70	25	3.80	45	3.90	65	3.80	45	3.90	65
17,	5.40	955	5.90	1486	4.90	530	4.80	464	4.50	280	4.30	185	4.10	120	3.70	25	3.80	45	3.90	65	3.80	45	3.90	65
18,	5.90	1486	5.90	1486	4.80	464	4.80	464	5.30	862	4.30	185	4.20	150	3.70	25	3.80	45	3.90	65	3.80	45	3.90	65
19,	6.30	1942	5.90	1486	5.00	600	4.80	464	6.70	2398	4.30	185	4.00	90	3.70	25	3.80	45	3.90	65	3.80	45	3.90	65
20,	7.50	3310	5.90	1486	5.20	770	4.70	400	6.80	2512	4.40	230	4.00	90	3.70	25	3.80	45	3.90	65	3.80	45	3.90	65
21,	8.20	4108	5.90	1486	5.30	862	4.70	400	6.70	2398	4.50	280	4.00	90	3.80	45	3.80	45	3.90	65	3.80	45	4.60	340
22,	8.60	4564	6.40	2056	5.60	1150	4.70	400	6.50	2170	4.50	280	4.00	90	3.80	45	3.80	45	3.90	65	3.90	65	4.80	464
23,	9.40	5476	6.20	1828	5.80	1372	4.80	464	6.10	1714	4.70	400	4.10	120	3.80	45	3.80	45	3.90	65	3.90	65	5.90	1486
24,	6.70	2398	6.00	1600	5.60	1150	4.80	464	5.80	1372	4.80	464	4.10	120	3.90	65	3.80	45	3.90	65	3.90	65	7.80	3652
25,	6.00	1600	6.30	1942	5.70	1260	4.80	464	5.50	1050	4.70	400	4.20	150	3.90	65	3.80	45	3.90	65	3.90	65	8.60	4564
26,	5.70	1260	6.80	2512	5.90	1486	5.20	770	5.20	770	4.60	340	4.10	120	3.90	65	3.80	45	3.90	65	3.80	45	8.30	4222
27,	5.50	1050	7.40	3196	6.00	1600	5.60	1150	5.20	770	4.50	280	4.10	120	3.80	45	3.80	45	3.90	65	3.80	45	7.50	3310
28,	5.60	1150	7.60	3424	6.30	1942	5.80	1372	5.00	600	4.50	280	4.00	90	3.80	45	3.80	45	3.90	65	3.90	65	6.70	2398
29,	5.80	1372	8.20	4108	6.20	1828	5.60	1150	5.00	600	4.60	340	4.00	90	3.80	45	3.80	45	3.90	65	3.90	65	5.90	1486
30,	5.70	1260	-----	-----	6.10	1714	5.40	955	5.00	600	4.70	400	4.00	90	3.80	45	3.80	45	3.90	65	3.90	65	5.40	955
31,	5.50	1050	-----	-----	5.90	1486	-----	-----	5.00	600	-----	-----	4.10	120	3.80	45	-----	-----	3.90	65	-----	-----	5.10	685

Note.—Jan., Feb. and Dec., discharge approximate on account of ice during portions of the months.

ESTIMATED MONTHLY DISCHARGE OF YOUGHIOGHENY RIVER, AT FRIENDSVILLE, MD.

(Drainage area 295 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1898.					
August 17-31,	1486	295	517	.98	1.75
September,	385	260	284	.96	1.07
October,	3766	260	675	2.29	2.64
November,	1942	470	803	2.72	3.03
December,	3538	470	1115	3.78	4.36
1899.					
January,	3880	710	1417	4.80	5.53
February,	3766	575	1579	4.58	5.35
March,	4108	1150	1928	6.53	7.53
April,	2626	425	944	3.20	3.57
May,	5590	425	1430	4.85	5.59
June,	2170	350	821	2.78	3.10
July,	785	295	378	1.28	1.48
August,	520	260	297	1.01	1.16
September,	350	245	280	.95	1.06
October,	275	245	254	.86	.99
November,	640	275	362	1.23	1.37
December,	1372	320	689	2.34	2.70
The year,	5590	245	873	2.87	39.43
1900.					
January,	1942	640	1085	3.68	4.24
February,	2512	515	1166	3.95	4.11
March,	2740	865	1435	4.86	5.60
April,	1372	400	734	2.49	2.78
May,	575	300	407	1.38	1.59
June,	2854	170	701	2.38	2.65
July,	1050	130	327	1.11	1.28
August,	455	130	222	0.75	0.86
September,	130	65	92	0.31	0.35
October,	255	95	148	0.50	0.58
November,	5590	170	743	2.52	2.81
December,	3310	255	1014	3.44	3.96
The year,	5590	65	673	2.28	30.81
1901.					
January,	1942	575	803	2.72	3.14
February,	600	600	600	2.03	2.11
March,	4450	600	1824	6.18	7.12
April,	4336	865	2103	7.13	7.96
May,	3082	400	1167	3.96	4.57
June,	1942	300	692	2.35	2.62
July,	785	130	231	.78	.90
August,	400	130	194	.66	.76
September,	300	95	159	.54	.60
October,	130	95	105	.36	.42
November,	350	95	176	.60	.67
December,	5362	300	1651	.56	.65
The year,	5362	95	809	2.32	31.52

ESTIMATED MONTHLY DISCHARGE OF YOUGHIOGHENY RIVER, AT FRIENDSVILLE, MD.

(*Drainage area 295 square miles.*)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1902.					
January,	3082	400	992	3.36	3.87
February,	3196	600	879	2.98	3.10
March,	6183	600	1970	6.68	7.70
April,	4108	400	1742	5.91	6.59
May,	1372	230	551	1.87	2.16
June,	1260	185	382	1.29	1.44
July,	2512	150	638	2.16	2.49
August,	530	65	181	.61	.70
September,	90	45	63	.21	.23
October,	862	120	280	.95	1.10
November,	1828	120	426	1.44	1.61
December,	4564	685	2066	7.00	8.07
The year	6183	45	848	2.87	39.06
1903.					
January,	4222	400	1330	4.51	5.20
February,	5020	600	2110	7.16	7.46
March,	4108	685	1718	5.82	6.71
April,	2740	400	1025	3.47	3.87
May,	1050	150	478	1.62	1.87
June,	4450	464	1725	5.85	6.53
July,	1828	150	781	2.65	3.06
August,	280	90	167	.57	0.66
September,	150	25	78	.26	.29
October,	464	25	148	.50	.58
November, a,	1150	65	271	.92	1.03
1904.					
January	5476	185	1159	3.93	4.53
February,	4108	280	1667	5.64	6.09
March,	3880	464	1551	5.26	6.06
April,	1372	400	703	2.38	2.66
May,	2512	230	883	2.99	3.45
June,	530	185	351	1.19	1.33
July,	340	90	185	.627	.723
August,	120	25	55	.187	.216
September,	45	45	45	.153	.171
October,	65	45	61	.207	.239
November,	65	45	50	.168	.187
December,	4564	65	802	2.72	3.14
The year,	5476	25	626	2.12	28.80

Note:—January, February and December approximate, on account of ice during periods of the months.

a River frozen November 30, 1903, to January 1, 1904.

OHIO BASIN—STATION NO. 29.

YOUGHIOGHENY RIVER AT CONFLUENCE, PA.

DESCRIPTION OF STATION.

This station was established by the United States Geological Survey on September 15th, 1904. On April 1st, 1907, this station was taken over by the Water Supply Commission of Pennsylvania, which has been operating it since that date. It is located on a two span, steel, highway bridge, about one-half mile from the railroad station at Confluence.

The channel is straight for 200 feet above and 500 feet below the station. The right bank is high and does not overflow, while the left bank is low and overflows during high water. The bed is rocky and there are two channels at all stages. There is a small cobble stone dam from four to six inches high under the bridge.

Discharge measurements are made from the upstream side of the bridge. The initial point for soundings is centre of bridge pin over right abutment on upstream side of bridge.

A standard chain gage is fastened to the downstream hand-rail of the bridge. The length of chain from the bottom of weight to the marker is 23.28 feet. The elevation of zero is arbitrary datum. Bench mark No. 1 is a cross on head of rivet in bed plate at right abutment on downstream side; elevation, 20.53 feet above gage datum. Bench mark No. 2 is a cross on lower chord of bridge under the gage box; elevation, 20.28 feet above gage datum. The gage is read once daily by Lloyd L. Mountain.

Since the establishment of this station 20 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF YOUGHIOGHENY RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

(Drainage area 435 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.	
	1904.							
1	July 7,	Hoyt & Hall, --------	235	379	1.40	------	530	Measured at railroad bridge below junction of Casselman river.
2	Sept. 12,	Murphy, ---------------	78	64	0.55	1.30	35	
3	Sept. 27,	Grover, ---------------	190	80	0.54	1.37	43	

DISCHARGE MEASUREMENTS OF YOUGHIOGHENY RIVER AT CONFLUENCE, SOMERSET COUNTY, PENNA.

(Drainage area 435 square miles).

No.	Date.	Hydrographer.	Width.	Area of section.	Gage height.	Mean Velocity.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.	
	1905.							
4	Mar. 11,	Murphy,	260	1365	4.52	7.02	6164	
5	Mar. 11,	do	260	1303	4.32	6.81	5628	
6	Mar. 15,	Grover & Morse,	240	699	3.42	4.41	2380	
7	Mar. 16,	do	240	699	3.36	4.42	2344	
8	Mar. 28,	Murphy,	231	553	3.39	.3.78	1872	
9	April 17,	Horton,	203	295	2.27	2.61	670	
10	April 22,	do	231	550	2.85	3.79	1567	
11	June 5,	Bolster,	203	256	2.08	2.41	534	
12	Nov. 4,	Hanna & Grieve,	203	251	1.99	2.30	499	
	1906.							
13	May 25,	Follansbee & Waite,	188	163	1.23	1.86	200	
	1907.							
14	June 10,	Horton,	222	475	2.93	3.38	1393	
15	Aug. 15,	Padgett,	201	196	1.57	2.20	307	
	1908.							
16	Feb. 16,	Henshaw,	257	1900	4.66	9.10	8850	0.2 & 0.8 depths.
17	Aug. 21,	Bolster,	178	98	0.77	1.59	76	
18	Sept. 25,	F. E. Langenheim,	75	69	0.33	1.20	22.9	Wading measurement by integration.
	1909.							
19	June 12,	Scheidenhelm,	232	679	3.32	4.34	2253	
	1911.							
20	July 13,	Langenheim,	234	316	1.25	2.75	396	Backwater from Laurel Hill creek.

DISCHARGE TABLE FOR YOUGHIOGHENY RIVER, AT CONFLUENCE SOMERSET COUNTY, FROM SEPT. 15, 1904.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.00	---------	4.00	1900	7.00	5950	10.00	10150	13.00	14350
.10	16	.10	2005	.10	6090	.10	10290	.10	14490
.20	23	.20	2110	.20	6230	.20	10430	.20	14630
.30	35	.30	2225	.30	6370	.30	10570	.30	14770
.40	50	.40	2340	.40	6510	.40	10710	.40	14910
.50	70	.50	2460	.50	6650	.50	10850	.50	15050
.60	94	.60	2580	.60	6790	.60	10990	.60	15190
.70	124	.70	2710	.70	6930	.70	11130	.70	15330
.80	160	.80	2850	.80	7070	.80	11270	.80	15470
.90	202	.90	2990	.90	7210	.90	11410	.90	15610
2.00	250	5.00	3135	8.00	7350	11.00	11550	14.00	15750
.10	308	.10	3276	.10	7490	.10	11690	.10	15890
.20	370	.20	3417	.20	7630	.20	11830	.20	16030
.30	441	.30	3558	.30	7770	.30	11970	.30	16170
.40	518	.40	3700	.40	7910	.40	12110	.40	16310
.50	595	.50	3842	.50	8050	.50	12250	.50	16450
.60	672	.60	3984	.60	8190	.60	12390	.60	16590
.70	750	.70	4126	.70	8330	.70	12530	.70	16730
.80	830	.80	4268	.80	8470	.80	12670	.80	16870
.90	910	.90	4409	.90	8610	.90	12810	.90	17010
3.00	995	6.00	4550	9.00	8750	12.00	12950	15.00	17150
.10	1080	.10	4690	.10	8890	.10	13090	.10	17290
.20	1165	.20	4830	.20	9030	.20	13230	.20	17430
.30	1250	.30	4970	.30	9170	.30	13370	.30	17570
.40	1335	.40	5110	.40	9310	.40	13510	.40	17710
.50	1420	.50	5250	.50	9450	.50	13650	.50	17850
.60	1510	.60	5390	.60	9590	.60	13790	.60	17990
.70	1600	.70	5530	.70	9730	.70	13930	.70	18130
.80	1695	.80	5670	.80	9870	.80	14070	.80	18270
.90	1795	.90	5810	.90	10010	.90	14210	.90	18410

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YOUGHIOGHENY RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1904. Day.	SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	1.30	35	1.35	42	1.40	50
2,	------	------	1.30	35	1.35	42	1.40	50
3,	------	------	1.30	35	1.35	42	1.40	50
4,	------	------	1.25	28	1.35	42	1.40	50
5,	------	------	1.25	28	1.30	35	1.40	50
6,	------	------	1.25	28	1.30	35	1.40	50
7,	------	------	1.25	28	1.30	35	1.40	50
8,	------	------	1.30	35	1.30	35	1.40	50
9,	------	------	1.35	42	1.30	35	1.40	50
10,	------	------	1.35	42	1.35	42	1.40	50
11,	------	------	1.40	50	1.35	42	*	50
12,	------	------	1.40	50	1.35	42	*	50
13,	------	------	1.40	50	1.35	42	*	70
14,	------	------	1.70	124	1.35	42	*	70
15,	------	------	1.70	124	1.35	42	*	94
16,	1.35	42	1.65	108	1.35	42	*	94
17,	1.35	42	1.60	94	1.40	50	†1.60	94
18,	1.35	42	1.60	94	1.40	50	*	94
19,	1.35	42	1.50	70	1.40	50	*	94
20,	1.35	42	1.45	60	1.40	50	*	94
21,	1.40	50	1.40	50	1.40	50	*	94
22,	1.40	50	1.40	50	1.40	50	*	94
23,	1.55	81	1.40	50	1.40	50	*	94
24,	1.55	81	1.40	50	1.40	50	‡1.90	94
25,	1.50	70	1.40	50	1.40	50	‡4.80	2850
26,	1.40	50	1.40	50	1.40	50	4.25	2165
27,	1.40	50	1.40	50	1.40	50	4.50	2460
28,	1.35	42	1.35	42	1.40	50	4.90	2990
29,	1.35	42	1.35	42	1.40	50	3.80	1695
30,	1.35	42	1.35	42	1.40	50	3.00	995
31,	------	------	1.35	42	------	------	2.70	750

*Frozen. Discharge estimated.
†Hole cut in ice and gage read to surface of water.
‡Ice gone out.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YOUGHIOGHENY RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1905. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.45	556	2.35	479	3.55	1465	2.75	790	2.55	633	3.20	1165	2.45	556	3.60	1510	2.10	308	1.60	94	2.50	595	3.95	1847
2,	2.35	479	2.30	-----	-----	*1465	2.60	672	2.40	518	2.80	830	3.65	1555	3.00	995	2.05	279	1.60	94	2.40	518	3.50	1420
3,	2.60	672	2.35	-----	-----	*1465	2.60	672	2.35	479	2.70	750	3.15	1122	2.70	750	2.05	279	1.80	160	2.30	441	8.05	7420
4,	2.50	595	2.30	441	3.55	1465	2.50	595	2.25	405	2.50	595	3.00	995	2.55	633	2.05	279	1.75	140	2.30	441	5.60	3984
5,	2.45	556	-----	-----	-----	*2210	2.55	633	2.25	405	2.40	518	3.90	1795	2.50	595	2.10	308	1.70	124	2.30	441	4.35	2282
6,	2.40	518	-----	-----	-----	*2955	2.65	711	2.30	441	2.30	441	3.60	1510	2.35	479	2.20	370	1.65	108	2.45	556	3.70	1600
7,	2.25	405	-----	-----	5.40	3700	2.75	790	2.30	441	3.00	995	4.50	2460	2.20	370	2.25	405	1.65	108	2.40	518	3.35	1292
8,	2.20	370	2.55	633	5.45	3771	2.90	910	2.35	479	2.90	910	4.80	2850	2.10	308	2.55	633	1.60	94	2.35	479	3.10	1080
9,	2.10	308	-----	-----	7.85	7140	2.90	910	2.25	405	2.75	790	3.85	1745	2.10	308	2.75	790	1.60	94	2.30	441	2.90	910
10,	2.15	339	-----	-----	8.70	8330	3.05	1037	2.25	405	2.60	672	3.30	1250	2.05	279	2.90	910	1.55	81	2.30	441	2.80	830
11,	2.20	370	2.65	711	6.75	5600	3.95	1847	2.40	518	4.70	2710	3.15	1122	2.30	441	3.50	1420	1.70	124	2.20	370	2.75	790
12,	2.45	556	-----	-----	5.65	4055	3.55	1465	3.00	995	3.60	1510	3.00	995	2.20	370	3.75	1647	2.30	441	2.20	370	2.70	750
13,	6.35	5040	-----	-----	5.05	3205	3.30	1250	2.85	870	3.50	1420	3.10	1080	2.10	308	3.10	1080	3.20	1165	2.15	339	2.60	672
14,	4.70	2710	-----	-----	4.70	2710	2.95	952	3.20	1165	3.10	1080	2.85	870	2.05	279	2.60	672	2.00	250	2.15	339	2.50	595
15,	3.55	1465	3.05	1037	4.45	2400	2.85	870	4.05	1952	2.70	750	2.55	633	4.50	2460	2.20	370	1.90	202	2.20	370	2.40	518
16,	3.15	1123	-----	-----	4.45	2400	2.75	790	3.85	1745	2.45	556	2.35	479	4.10	2005	2.15	339	1.80	160	2.20	370	2.35	479
17,	2.90	910	-----	-----	5.70	4126	2.60	672	3.70	1600	2.40	518	2.20	370	3.20	1165	3.10	1080	1.75	140	2.30	441	2.30	441
18,	2.75	790	3.35	1292	6.45	5180	2.60	672	3.40	1335	2.30	441	2.15	339	2.70	750	2.05	279	1.70	124	2.30	441	2.25	405
19,	2.60	672	-----	-----	8.70	8330	2.50	595	3.00	995	2.20	370	2.10	308	2.40	518	2.00	250	1.90	202	2.35	479	2.25	405
20,	2.55	633	-----	-----	8.45	7980	2.75	790	2.85	870	2.20	370	2.20	370	2.30	441	1.95	225	6.15	4760	2.20	370	2.20	370
21,	2.50	595	-----	-----	10.25	10500	3.05	1037	2.75	790	2.10	308	2.70	750	2.20	370	1.90	202	4.10	2005	2.10	308	3.80	1695
22,	2.40	518	3.45	1377	8.05	7420	3.80	1695	2.60	672	3.35	1292	2.40	518	2.10	308	1.80	160	3.25	1207	2.05	279	4.60	2580
23,	2.45	556	-----	-----	5.85	4338	3.45	1377	2.50	595	3.10	1080	2.30	441	2.10	308	1.80	160	2.80	830	2.05	279	4.20	2110
24,	2.35	479	-----	-----	4.90	2990	3.10	1080	2.35	479	3.40	1335	2.70	750	2.00	250	1.80	160	2.60	672	2.00	250	4.00	1900
25,	2.40	518	3.55	1465	5.20	3417	3.00	995	2.30	441	3.00	995	2.50	595	2.50	595	1.80	160	3.50	1420	2.10	308	3.50	1420
26,	2.40	518	-----	-----	4.55	2520	2.80	830	2.25	405	2.80	830	2.25	405	4.00	1900	1.75	140	3.50	1420	2.05	279	3.10	1080
27,	2.30	441	-----	-----	4.15	2057	2.90	910	2.20	370	3.45	1377	2.10	308	2.95	952	1.70	124	3.30	1250	2.05	279	2.95	952
28,	2.35	479	-----	-----	3.70	1600	2.85	870	2.15	339	2.90	910	2.05	279	2.65	711	1.70	124	3.00	995	2.40	518	2.85	870
29,	2.30	441	-----	-----	3.30	1250	2.85	870	2.00	250	2.60	672	2.40	518	2.30	441	1.65	108	2.80	830	5.40	3700	3.10	1080
30,	2.35	479	-----	-----	3.15	1122	2.60	672	2.05	279	2.50	595	4.40	2340	2.25	405	1.60	94	2.65	711	5.35	3629	2.85	870
31,	2.30	441	-----	-----	2.90	910	-----	-----	2.10	308	-----	-----	4.00	1900	2.20	370	-----	-----	2.55	633	-----	-----	2.75	790

Note—From February 5 to March 6 river was frozen entirely across, except for narrow channel of open water under gage. Thickness of ice 0.7 to 1. ft.

*Estimated

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YOUGHIOGHENY RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1906.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.60	672	2.60	672	2.50	595	6.10	4690	3.10	1080	2.45	556	2.45	556	2.20	370	1.90	202	1.80	160	2.10	308	2.30	441
2,	2.50	595	2.50	595	2.50	595	5.10	3276	3.30	1250	2.50	595	2.40	518	2.10	308	1.90	202	1.75	140	2.20	370	2.30	441
3,	2.85	870	2.45	556	2.50	595	4.80	2850	3.20	1165	2.35	479	2.20	370	2.40	518	1.80	160	1.75	140	1.95	225	2.65	711
4	5.35	3629	2.40	518	2.75	790	4.80	2850	3.00	995	2.25	405	2.15	339	2.10	308	1.80	160	1.85	180	1.80	160	2.50	595
5,	4.40	2340	2.35	479	3.40	1335	5.20	3417	2.90	910	2.20	370	2.15	339	2.00	250	1.75	140	2.10	308	1.80	160	2.35	479
6,	3.70	1600	2.25	405	3.20	1165	7.00	5950	2.80	830	4.40	2340	2.10	308	1.90	202	1.70	124	2.20	370	1.85	180	3.30	1250
7,	3.30	1250	2.15	339	3.00	995	5.50	3842	2.70	750	5.20	3417	2.00	250	1.90	202	1.70	124	2.35	479	1.80	160	4.10	2005
8,	3.20	1165	1.90	202	2.85	870	4.50	2460	2.60	672	3.90	1795	1.95	225	4.40	2340	1.65	108	2.25	405	1.75	140	3.50	1420
9,	3.70	1600	1.90	202	2.75	790	4.40	2340	2.60	672	3.35	1292	1.90	202	7.40	6510	1.65	108	2.10	308	1.75	140	3.10	1080
10,	2.50	595	1.95	225	2.75	790	5.75	4197	2.60	672	2.90	910	1.90	202	8.20	7630	1.80	160	2.05	279	1.80	160	6.40	5110
11,	2.70	750	2.00	250	2.80	830	4.80	2850	2.55	633	2.70	750	1.85	180	5.10	3276	1.80	160	2.00	250	1.80	160	8.10	7490
12,	3.30	1250	2.20	370	2.85	870	4.10	2005	2.50	595	2.60	672	1.85	180	3.90	1795	1.60	94	2.00	250	1.85	180	5.55	3913
13,	2.70	750	2.15	339	2.75	790	3.80	1695	2.40	518	2.50	595	1.80	160	3.40	1335	1.65	108	1.95	225	1.80	160	4.40	2340
14,	2.70	750	2.10	308	2.70	750	3.60	1510	2.30	441	2.40	518	1.80	160	3.00	995	2.00	250	1.95	225	1.80	160	3.95	1847
15,	2.75	790	2.05	279	2.75	790	5.20	3417	2.25	405	2.35	479	1.75	140	2.80	830	1.80	160	1.90	202	1.85	180	3.65	1555
16,	2.85	870	2.05	279	2.75	790	4.70	2710	2.20	370	2.25	405	1.75	140	2.55	633	1.70	124	1.90	202	1.90	202	4.20	2110
17,	3.55	1465	2.00	250	2.70	750	4.10	2005	2.15	339	2.15	339	1.75	140	2.55	633	1.65	108	1.85	180	2.00	250	5.85	4338
18,	3.80	1695	2.05	279	2.65	711	3.70	1600	2.10	308	2.10	308	1.80	160	2.50	595	1.95	225	1.85	180	3.00	995	6.40	5110
19,	4.35	2282	2.10	308	2.70	750	3.40	1335	2.10	308	2.05	279	1.70	124	2.70	750	1.90	202	1.85	180	3.50	1420	4.80	2850
20,	3.80	1695	2.20	370	2.75	790	3.10	1080	2.05	279	2.30	441	1.70	124	3.60	1510	1.90	202	2.00	250	4.40	2340	4.10	2005
21,	3.80	1695	2.20	370	2.60	672	3.10	1080	2.00	250	3.10	1080	1.70	124	4.00	1900	1.85	180	2.30	441	4.00	1900	3.90	1795
22,	3.85	1745	2.40	518	2.50	595	3.20	1165	2.00	250	2.90	910	1.80	160	3.15	1122	1.85	180	2.40	518	3.35	1292	3.60	1510
23,	10.00	10150	2.65	711	2.50	595	3.35	1292	1.95	225	2.80	830	2.80	830	2.70	750	1.85	180	2.30	441	2.90	910	3.25	1207
24,	6.40	5110	2.60	672	2.80	830	3.40	1335	1.90	202	2.80	830	2.40	518	2.60	672	1.80	160	2.15	339	2.70	750	3.00	995
25,	4.80	2850	2.45	556	3.00	995	3.40	1335	1.85	180	2.60	672	2.20	370	2.60	672	1.80	160	2.05	279	2.55	633	2.80	830
26,	4.00	1900	2.30	441	2.70	750	3.40	1335	1.85	180	2.50	595	2.00	250	2.35	479	1.75	140	1.95	225	2.45	556	2.80	830
27,	3.50	1420	2.30	441	5.50	3842	4.65	2645	1.80	160	2.50	595	1.80	160	2.35	479	1.75	140	1.95	225	2.35	479	2.85	870
28,	3.30	1250	2.35	479	8.00	7350	3.90	1795	2.30	441	2.45	556	1.75	140	2.25	405	1.70	124	1.90	202	2.30	441	3.50	1420
29,	3.10	1080	------	------	6.40	5110	3.50	1420	2.35	479	2.75	790	1.70	124	2.15	339	1.70	124	1.95	225	2.25	405	4.90	2990
30,	2.90	910	------	------	7.70	6930	3.25	1207	2.30	441	2.50	595	2.50	595	2.10	308	1.80	160	2.05	279	2.20	370	5.35	3629
31,	2.80	830	------	------	8.60	8190	------	------	2.40	518	------	------	2.30	441	2.00	250	------	------	2.10	308	------	------	7.50	6650

Note—Discharge probably unaffected by ice conditions.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YOUGHIOGHENY RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1907.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	6.30	4970	2.65	711	3.20	1165	2.45	556	3.10	1080	3.20	1165	2.20	370	2.90	910	2.05	279	2.05	279	2.30	441	3.20	1165
2,	4.90	2990	3.20	1165	4.15	2057	2.40	518	3.00	995	5.55	3913	2.70	750	2.70	750	2.00	250	1.95	225	2.35	479	3.00	995
3,	4.40	2340	6.35	5040	3.60	1510	2.30	441	2.95	952	4.50	2460	2.55	633	2.60	672	2.65	711	1.90	202	6.00	4550	3.10	1080
4,	3.90	1795	5.00	3135	3.40	1335	2.25	405	3.20	1165	3.50	1420	2.35	479	2.50	595	2.60	672	2.10	308	4.70	2710	3.90	1795
5,	3.70	1600	3.75	1647	3.25	1207	2.25	405	2.90	910	4.50	2460	2.10	308	2.50	595	2.50	595	2.10	308	4.30	2225	3.00	995
6,	3.40	1335	3.65	1555	3.10	1080	2.20	370	2.85	870	4.80	2850	2.05	279	3.40	1335	2.20	370	2.55	633	4.10	2005	2.50	595
7,	3.40	1335	3.60	1510	3.00	995	2.25	405	3.15	1122	4.20	2110	2.00	250	3.10	1080	2.05	279	2.45	556	6.75	5600	2.75	790
8,	3.90	1795	3.30	1250	2.95	952	2.40	518	3.15	1122	4.05	1952	1.95	225	3.00	995	2.05	279	2.40	518	5.25	3487	3.00	995
9,	6.75	5600	3.15	1122	2.90	910	2.40	518	8.25	7700	3.60	1510	1.90	202	2.90	910	2.05	279	3.00	995	5.10	3276	3.20	1165
10,	5.00	3135	2.80	830	3.00	995	2.75	790	5.25	3487	3.20	1165	1.90	202	2.80	830	2.00	250	2.70	750	4.25	2167	5.95	4479
11,	4.20	2110	2.70	750	3.50	1420	2.80	830	4.40	2340	5.15	3346	2.80	830	2.75	790	2.45	556	2.50	595	3.80	1695	5.85	4338
12,	11.15	11760	2.65	711	3.50	1420	3.00	995	4.00	1900	3.85	1745	5.35	3629	2.60	672	2.50	595	2.40	518	3.60	1510	5.60	3984
13,	7.25	6300	2.65	711	16.20	18730	3.00	995	3.40	1335	4.05	1952	3.85	1745	2.50	595	2.30	441	2.45	556	2.15	339	5.40	3700
14,	11.60	12390	2.60	672	19.00	22650	3.10	1080	3.05	1037	5.30	3558	3.05	1037	2.40	518	2.10	308	2.30	441	2.95	952	5.00	3135
15,	8.90	8610	2.90	910	9.50	9450	3.00	995	2.85	870	4.05	1952	2.70	750	2.30	441	2.00	250	2.25	405	2.75	790	4.60	2580
16,	6.70	5530	2.85	870	6.50	5250	3.70	1600	2.85	870	3.60	1510	2.50	595	2.20	370	1.90	202	2.40	518	2.55	633	4.30	2225
17,	6.30	4970	2.80	830	5.00	3135	3.70	1600	2.75	790	3.40	1335	5.20	3417	2.10	308	1.90	202	2.40	518	2.50	595	4.00	1900
18,	8.10	7490	2.75	790	4.40	2340	3.45	1377	2.65	711	3.10	1080	6.10	4690	2.10	308	2.05	279	2.25	405	2.60	672	3.85	1745
19,	12.65	13860	3.00	995	14.00	15750	3.30	**1250**	2.85	870	2.85	870	4.60	2580	2.10	308	2.30	441	2.15	339	3.10	1080	2.50	595
20,	9.30	9170	3.85	1745	10.70	11130	3.30	1250	4.40	2340	2.75	790	3.80	1695	2.00	250	2.30	441	2.10	308	2.80	830	2.40	518
21,	6.20	4830	3.40	1335	6.70	5530	3.25	1207	3.65	1555	2.70	750	3.20	1165	1.90	202	2.20	370	2.10	308	2.65	711	2.35	479
22,	4.80	2850	3.10	1080	5.70	4126	3.20	1165	3.55	1465	2.60	672	3.20	1165	1.90	202	2.10	308	2.00	250	2.85	870	2.50	595
23,	4.10	2005	3.05	1037	4.30	2225	3.20	1165	3.45	1377	2.40	518	4.60	2580	2.20	370	2.10	308	1.95	225	2.80	830	6.05	4620
24,	3.70	1600	3.00	995	3.75	1647	5.30	3558	3.35	1292	2.60	672	4.00	1900	4.00	1900	2.40	518	1.90	202	2.80	830	7.25	6300
25,	4.00	1900	2.95	952	3.35	1292	4.40	2340	3.05	1037	2.30	441	3.80	1695	3.55	1465	2.15	339	1.85	180	2.90	910	5.75	4197
26,	3.70	1600	2.90	910	3.10	1080	3.85	1745	3.15	1122	2.30	441	6.60	5390	3.10	1080	2.10	308	1.90	202	3.00	995	4.70	2710
27,	3.30	1250	2.90	910	3.00	995	3.70	1600	3.25	1207	2.30	441	5.35	3629	2.75	790	2.00	250	2.00	250	3.15	1122	3.85	1745
28,	3.05	1037	3.00	995	2.85	870	3.55	1465	3.20	1165	2.20	370	4.20	2110	2.55	633	1.90	202	3.30	1250	3.25	1207	5.00	3135
29,	2.90	910	------	------	2.80	830	3.40	1335	3.10	1080	2.20	370	3.70	1600	2.35	479	1.85	180	2.75	790	3.75	1647	5.20	3417
30,	2.80	830	------	------	2.65	711	3.20	1165	2.90	910	2.20	370	3.35	1292	2.20	370	2.10	308	2.35	479	3.15	1122	4.20	2110
31,	2.70	750	------	------	2.55	633	------	------	2.90	910	------	------	2.95	952	2.10	308	------	------	2.40	518	------	------	4.10	2005

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YOUGHIOGHENY RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.80	1695	3.30	1250	2.70	750	4.75	2780	2.60	672	2.95	952	1.60	94	1.65	108	1.50	70	1.30	35	1.30	35	1.30	35
2,	3.60	1510	2.95	952	7.50	6650	4.75	2780	2.50	595	2.75	790	1.60	94	1.60	94	1.50	70	1.30	35	1.30	35	1.30	35
3,	3.50	1420	2.75	790	7.20	6230	4.05	1952	2.50	595	2.60	672	1.60	94	1.60	94	1.50	70	1.30	35	1.30	35	1.30	35
4,	3.00	995	2.60	672	5.50	3842	3.65	1555	3.55	1465	2.50	595	1.60	94	1.55	81	1.45	60	1.30	35	1.30	35	1.30	35
5,	2.95	952	2.55	633	5.10	3276	3.40	1335	7.85	7140	2.45	556	1.60	94	1.55	81	1.45	60	1.30	35	1.30	35	1.25	28
6,	2.90	910	2.55	633	7.40	6510	3.40	1335	6.70	5530	2.40	518	1.55	81	1.55	81	1.45	60	1.30	35	1.30	35	1.25	28
7,	2.65	711	2.70	750	10.90	11410	3.20	1165	10.25	10500	2.50	595	1.55	81	2.05	279	1.45	60	1.30	35	1.30	35	1.40	50
8,	2.50	595	2.60	672	7.75	7000	3.90	1795	8.10	7490	2.35	479	1.55	81	1.90	202	1.45	60	1.25	28	1.30	35	1.50	70
9,	2.65	711	2.55	633	10.05	10220	5.40	3700	6.15	4760	2.20	370	1.50	70	1.70	124	1.45	60	1.25	28	1.30	35	1.40	50
10,	2.55	633	2.55	633	6.60	5390	4.55	2520	5.25	3487	2.10	308	1.50	70	1.50	70	1.40	50	1.25	28	1.30	35	1.50	70
11,	2.45	556	2.60	672	5.30	3558	7.25	6300	4.45	2400	2.00	250	1.50	70	1.50	70	1.40	50	1.25	28	1.30	35	1.50	70
12,	6.45	5180	2.70	750	5.00	3135	4.95	3062	3.85	1745	2.00	250	1.50	70	1.50	70	1.40	50	1.25	28	1.30	35	1.60	94
13,	5.80	4268	3.75	1647	5.00	3135	4.20	2110	3.50	1420	1.95	225	1.50	70	1.45	60	1.40	50	1.25	28	1.30	35	1.70	124
14,	5.35	3629	5.65	4055	5.30	3558	3.75	1647	3.35	1292	1.90	202	1.70	124	1.45	60	1.35	42	1.25	28	1.30	35	1.70	124
15,	4.65	2645	15.00	17150	5.00	3135	3.60	1510	3.90	1795	2.05	279	1.85	180	1.40	50	1.35	42	1.25	28	1.30	35	1.70	124
16,	3.65	1555	8.75	8400	4.80	2850	3.50	1420	3.60	1510	2.00	250	1.85	180	1.40	50	1.30	35	1.25	28	1.30	35	1.70	124
17,	3.30	1250	5.80	4268	4.40	2340	3.40	1335	3.40	1335	1.95	225	1.85	180	1.40	50	1.30	35	1.25	28	1.30	35	1.70	124
18,	2.95	952	4.95	3062	4.50	2460	3.30	1250	3.25	1207	1.90	202	1.80	160	2.35	479	1.25	28	1.25	28	1.35	42	2.20	370
19,	2.80	830	4.00	1900	11.00	11550	4.30	2225	4.30	2225	1.90	202	1.95	225	2.00	250	1.25	28	1.25	28	1.35	42	2.80	830
20,	2.65	711	3.50	1420	6.75	5600	4.00	1900	5.30	3558	1.85	180	1.85	180	1.75	140	1.25	28	1.25	28	1.40	50	2.30	441
21,	2.70	750	3.20	1165	4.90	2990	3.35	1292	5.60	3984	1.85	180	1.70	124	1.55	81	1.20	23	1.25	28	1.40	50	2.00	250
22,	3.10	1080	3.15	1122	4.15	2057	3.20	1165	6.60	5390	1.90	202	1.60	94	1.50	70	1.20	23	1.25	28	1.40	50	1.85	180
23,	3.20	1165	2.90	910	3.80	1695	3.10	1080	4.40	2340	1.90	202	1.50	70	1.50	70	1.20	23	1.25	28	1.40	50	1.85	180
24,	3.05	1037	2.80	830	3.75	1647	3.00	995	4.40	2340	1.85	180	2.45	556	1.70	124	1.20	23	1.25	28	1.40	50	1.85	180
25,	3.00	995	2.70	750	3.25	1207	2.90	910	3.90	1795	1.85	180	2.20	370	1.70	124	1.20	23	1.30	35	1.40	50	1.80	160
26,	3.25	1207	2.70	750	3.00	995	2.80	830	3.60	1510	1.80	160	2.10	308	1.65	108	1.20	23	1.30	35	1.35	42	1.70	124
27,	3.95	1847	2.70	750	2.85	870	2.60	672	3.50	1420	1.70	124	2.00	250	1.65	108	1.20	23	1.30	35	1.35	42	1.60	94
28,	3.75	1647	2.70	750	2.80	830	2.45	556	3.30	1250	1.65	108	1.90	202	1.65	108	1.30	35	1.30	35	1.35	42	1.70	124
29,	3.10	1080	2.65	711	3.65	1555	2.45	556	3.60	1510	1.65	108	1.85	180	1.60	94	1.30	35	1.30	35	1.35	42	1.70	124
30,	2.85	870	------	------	3.80	1695	2.40	518	4.20	2110	1.60	94	1.75	140	1.55	81	1.30	35	1.30	35	1.30	35	1.70	124
31,	3.70	1600	------	------	4.55	2520	------	------	3.30	1250	------	------	1.70	124	1.50	70	------	------	1.30	35	------	------	1.75	140

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YOUGHIOGHENY RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1909. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.75	140	2.25	405	3.60	1510	3.00	995	3.80	1695	2.70	750	2.20	370	1.60	94	1.75	140	1.55	81	2.00	250	1.90	202
2,	2.00	250	2.50	595	3.90	1795	3.00	995	3.70	1600	3.00	995	2.10	308	1.60	94	1.70	124	1.55	81	2.00	250	1.85	180
3,	2.05	279	2.50	595	4.60	2580	3.20	1165	3.50	1420	3.35	1292	2.05	279	1.60	94	1.70	124	1.50	70	1.95	225	1.85	180
4,	1.80	160	2.40	518	4.60	2580	3.90	1795	3.60	1510	3.20	1165	2.00	250	1.60	94	1.70	124	1.50	70	1.95	225	1.85	180
5,	1.80	160	2.50	595	4.40	2340	3.85	1745	3.40	1335	5.00	3135	2.00	250	1.60	94	1.80	160	1.50	70	1.90	202	1.85	180
6,	1.90	202	3.60	1510	3.80	1695	3.75	1647	3.00	995	5.35	3629	1.90	202	1.60	94	1.90	202	1.50	70	1.85	180	1.80	160
7,	1.90	202	3.35	1292	3.40	1335	3.45	1377	2.80	830	4.10	2005	1.80	160	1.55	81	1.80	160	1.45	60	1.80	160	1.90	202
8,	1.85	180	2.90	910	4.20	2110	3.20	1165	2.70	750	4.05	1952	1.75	140	1.55	81	1.75	140	1.45	60	1.80	160	2.40	518
9,	1.80	160	2.80	830	4.20	2110	3.00	995	2.65	711	3.75	1647	1.70	124	1.50	70	1.70	124	1.45	60	2.00	250	2.40	518
10,	2.00	250	3.00	995	4.50	2460	2.90	910	2.60	672	3.90	1795	1.65	108	1.45	60	1.65	108	1.40	50	2.10	308	2.20	370
11,	1.90	202	3.90	1795	3.90	1795	2.85	870	2.50	595	5.30	3558	1.65	108	1.45	60	1.70	124	1.55	81	2.00	250	2.10	308
12,	2.00	250	3.75	1647	3.40	1335	2.80	830	2.40	518	4.30	2225	1.65	108	1.40	50	2.15	339	2.25	405	2.00	250	2.10	308
13,	2.10	308	3.60	1510	3.25	1207	2.75	790	2.30	441	3.60	1510	1.65	108	1.40	50	2.05	279	2.15	339	2.00	250	2.40	518
14,	2.30	441	4.00	1900	3.15	1122	6.05	4620	2.25	405	3.70	1600	1.65	108	1.40	50	1.90	202	1.90	202	1.95	225	3.40	1335
15,	4.85	2920	3.90	1795	3.00	995	4.85	2920	2.20	370	3.60	1510	1.65	108	1.45	60	1.80	160	1.90	202	1.95	225	2.60	672
16,	4.00	1900	6.00	4550	2.90	910	4.00	1900	2.15	339	3.60	1510	1.60	94	3.05	1037	1.70	124	1.85	180	1.95	225	2.50	595
17,	3.35	1292	4.50	2460	2.80	830	3.50	1420	2.20	370	3.95	1847	1.60	94	3.50	1420	2.50	595	1.80	160	1.95	225	2.35	479
18,	2.85	870	3.90	1795	2.80	830	3.15	1122	2.10	308	3.25	1207	1.60	94	2.90	910	2.10	308	1.75	140	1.95	225	2.25	405
19,	2.50	595	3.60	1510	2.75	790	3.10	1080	2.00	250	3.05	1037	1.60	94	2.60	672	2.00	250	1.75	140	1.95	225	2.15	339
20,	2.70	750	3.85	1745	3.10	1080	3.65	1555	2.00	250	2.90	910	1.60	94	2.35	479	1.90	202	1.75	140	1.95	225	2.05	279
21,	2.60	672	3.50	1420	2.90	910	5.85	4338	2.05	279	2.80	830	1.55	81	3.20	1165	1.80	160	1.75	140	1.95	225	2.00	250
22,	2.80	830	3.25	1207	2.80	830	7.20	6230	2.30	441	2.70	750	1.50	70	2.40	518	1.80	160	1.90	202	1.95	225	2.00	250
23,	3.60	1510	3.65	1555	2.65	711	5.95	4479	2.20	370	2.65	711	1.50	70	2.10	308	1.75	140	2.10	308	1.95	225	1.90	202
24,	4.70	2710	8.10	7490	2.55	633	5.05	3205	2.05	279	2.60	672	1.65	108	1.90	202	1.75	140	5.00	3135	1.90	202	1.90	202
25,	3.90	1795	6.50	5250	2.75	790	4.20	2110	2.00	250	2.40	518	1.70	124	1.80	160	1.75	140	3.50	1420	1.90	202	2.00	250
26,	3.70	1600	5.00	3135	3.10	1080	4.05	1952	2.00	250	2.25	405	1.70	124	1.70	124	1.75	140	2.90	910	1.90	202	2.10	308
27,	2.90	910	4.45	2400	3.30	1250	3.60	1510	2.30	441	2.15	339	1.65	108	1.70	124	1.70	124	2.40	518	1.90	202	2.10	308
28,	2.80	830	4.15	2057	3.50	1420	3.40	1335	3.15	1122	2.00	250	1.65	108	1.70	124	1.65	108	2.40	518	1.85	180	2.10	308
29,	2.70	750	------	------	3.40	1335	3.20	1165	2.90	910	2.00	250	1.65	108	1.85	180	1.65	108	2.30	441	1.90	202	2.10	308
30,	2.25	405	------	------	3.30	1250	3.30	1250	2.60	672	2.00	250	1.65	108	1.85	180	1.60	94	2.20	370	1.90	202	2.10	308
31,	1.75	140	------	------	3.10	1080	------	------	2.50	595	------	------	1.65	108	1.85	180	------	------	2.10	308	------	------	2.10	308

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YOUGHIOGHENY RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.25	405	2.95	952	7.05	6020	1.95	225	2.70	750	3.00	995	2.25	405	1.60	94	1.60	94	1.35	42	1.40	50	1.80	160
2,	3.25	1207	2.85	870	6.40	5110	1.95	225	2.55	633	3.90	1795	2.25	405	1.60	94	1.70	124	1.35	42	1.45	60	1.80	160
3,	10.80	11270	2.90	910	5.40	3700	1.90	202	2.45	556	3.90	1795	2.20	370	1.55	81	1.70	124	1.35	42	1.45	60	1.80	160
4,	7.35	6440	2.85	870	4.85	2920	1.90	202	2.35	479	3.60	1510	2.15	339	1.55	81	2.15	339	1.30	35	1.45	60	1.80	160
5,	4.65	2645	2.55	633	4.55	2520	1.95	225	2.30	441	3.85	1745	2.10	308	1.50	70	2.15	339	1.30	35	1.45	60	1.80	160
6,	4.85	2920	2.20	370	4.40	2340	1.95	225	2.30	441	4.60	2580	2.10	308	1.50	70	1.80	160	1.30	35	1.40	50	1.90	202
7,	5.30	3558	2.00	250	3.90	1795	1.90	202	2.25	405	3.95	1847	2.05	279	1.50	70	1.75	140	1.30	35	1.40	50	1.90	202
8,	4.95	3062	2.00	250	3.50	1420	1.90	202	2.20	370	3.35	1292	2.00	250	1.50	70	1.70	124	1.35	42	1.40	50	1.90	202
9,	3.90	1795	2.50	595	3.20	1165	1.90	202	2.30	441	3.25	1207	2.10	308	1.50	70	1.65	108	1.35	42	1.40	50	1.90	202
10,	3.35	1292	3.60	1510	2.90	910	1.90	202	2.30	441	3.95	1847	2.15	339	1.50	70	1.60	94	1.35	42	1.40	50	2.10	308
11,	3.00	995	3.35	1292	2.75	790	1.90	202	2.35	479	4.30	2225	2.10	308	1.50	70	1.60	94	1.35	42	1.40	50	2.15	339
12,	2.95	952	3.15	1122	2.65	711	1.90	202	3.05	1037	4.10	2005	2.05	279	1.50	70	1.60	94	1.35	42	1.40	50	2.20	370
13,	2.85	870	3.00	995	2.55	633	1.90	202	2.90	910	3.80	1695	2.20	370	1.50	70	1.60	94	1.30	35	1.40	50	2.40	518
14,	2.80	830	2.85	870	2.50	595	1.85	180	2.95	952	3.60	1510	2.20	370	1.50	70	1.60	94	1.30	35	1.40	50	2.40	518
15,	2.80	830	2.75	790	2.45	556	1.85	180	2.75	790	3.45	1377	2.10	308	1.50	70	1.60	94	1.30	35	1.40	50	2.50	595
16,	2.80	830	4.85	2920	2.40	518	1.85	180	2.55	633	3.40	1335	2.00	250	1.50	70	1.55	81	1.30	35	1.40	50	2.60	672
17,	2.80	830	5.80	4268	2.35	479	1.85	180	2.40	518	4.10	2005	1.90	202	1.50	70	1.55	81	1.30	35	1.40	50	2.60	672
18,	*10.70	11130	5.20	3417	2.30	441	1.80	160	2.30	441	3.95	1847	1.85	180	1.45	60	1.55	81	1.30	35	1.40	50	2.60	672
19,	7.90	7210	4.00	1900	2.30	441	1.80	160	2.40	518	12.20	13230	1.80	160	1.45	60	1.55	81	1.30	35	1.50	70	2.60	672
20,	5.15	3346	3.45	1377	2.50	595	1.80	160	2.40	518	6.70	5530	1.75	140	1.45	60	1.50	70	1.30	35	1.50	70	2.60	672
21,	6.80	5670	3.90	1795	2.40	518	1.85	180	2.35	479	4.30	2225	1.70	124	1.45	60	1.50	70	1.30	35	1.50	70	2.60	672
22,	5.35	3629	7.25	6300	2.30	441	3.10	1080	2.30	441	3.90	1795	1.65	108	1.45	60	1.50	70	1.30	35	1.50	70	2.60	672
23,	4.15	2057	5.60	3984	2.20	370	3.25	1207	2.25	405	3.55	1465	1.65	108	1.45	60	1.45	60	1.40	50	1.50	70	2.60	672
24,	3.65	1555	4.45	2400	2.15	339	3.05	1037	2.30	441	3.30	1250	1.60	94	1.45	60	1.45	60	1.40	50	1.50	70	2.70	750
25,	3.35	1292	3.70	1600	2.15	339	5.55	3913	2.85	870	3.20	1165	1.60	94	1.45	60	1.45	60	1.40	50	1.60	94	2.70	750
26,	3.25	1207	3.60	1510	2.10	308	4.45	2400	2.90	910	3.00	995	1.60	94	1.45	60	1.45	60	1.40	50	1.60	94	2.70	750
27,	4.35	2282	3.70	1600	2.10	308	3.75	1647	2.70	750	2.80	830	1.55	81	1.40	50	1.40	50	1.40	50	1.60	94	2.70	750
28,	3.90	1795	6.20	4830	2.00	250	3.60	1510	2.60	672	2.70	750	1.50	70	1.40	50	1.40	50	1.40	50	1.75	140	2.70	750
29,	3.50	1420	------	------	2.00	250	3.40	1335	2.55	633	2.50	595	1.50	70	1.40	50	1.40	50	1.40	50	1.80	160	2.90	910
30,	3.30	1250	------	------	1.95	225	3.10	1080	2.50	595	2.35	479	1.75	140	1.40	50	1.35	42	1.40	50	1.80	160	6.80	5670
31,	3.05	1037	------	------	1.95	225	------	------	2.50	595	------	------	1.65	108	1.40	50	------	------	1.40	50	------	------	5.85	4338

*Maximum 11.90 feet—12810 second feet.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YOUGHIOGHENY RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.20	2110	5.10	3276	3.70	1600	3.10	1080	3.00	995	2.60	672	2.80	830	1.75	140	5.20	3417	4.35	2282	2.70	750	2.90	910
2,	5.00	3135	4.45	2400	3.60	1510	3.05	1037	2.85	870	2.35	479	2.65	711	1.75	140	4.00	1900	6.50	5250	2.70	750	2.90	910
3,	6.10	4690	4.00	1900	3.50	1420	3.00	995	2.75	790	2.25	405	2.50	595	1.80	160	3.40	1335	5.50	3842	2.60	672	2.85	870
4,	5.00	3135	3.85	1745	3.40	1335	3.40	1335	2.65	711	2.15	339	2.45	556	3.30	1250	3.00	995	6.10	4690	2.60	672	2.85	870
5,	4.10	2005	3.75	1647	3.35	1292	7.70	6930	2.60	672	2.05	279	2.45	556	2.75	790	2.80	830	4.20	2110	2.45	556	2.80	830
6,	3.60	1510	3.65	1555	3.40	1335	9.50	9450	2.55	633	2.00	250	2.40	518	2.50	595	3.20	1165	3.80	1695	2.45	556	2.75	790
7,	3.25	1207	3.45	1377	3.40	1335	6.35	5040	2.45	556	2.00	250	2.40	518	2.40	518	3.20	1165	6.00	4550	4.35	2282	2.80	830
8,	3.00	995	3.30	1250	3.45	1377	5.15	3346	2.40	518	2.00	250	2.55	633	2.30	441	3.10	1080	5.30	3558	3.75	1647	2.75	790
9,	2.80	830	3.40	1335	3.45	1377	5.05	3205	2.35	479	1.95	225	2.25	405	2.20	370	3.00	995	4.60	2580	3.50	1420	2.90	910
10,	2.60	672	3.15	1122	3.40	1335	4.90	2990	2.20	370	1.80	160	2.15	339	2.05	279	2.80	830	4.10	2005	3.20	1165	2.95	952
11,	2.90	910	3.15	1122	3.40	1335	4.45	2400	2.25	405	1.90	202	2.15	339	2.15	339	2.90	910	4.30	2225	3.05	1037	2.95	952
12,	3.20	1165	3.05	1037	3.40	1335	4.00	1900	2.20	370	2.95	952	2.15	339	2.10	308	2.85	870	4.20	2110	3.00	995	2.95	952
13,	12.40	13510	3.05	1037	3.30	1250	3.70	1600	2.15	339	3.60	1510	2.10	308	2.05	279	2.85	870	3.80	1695	2.95	952	2.90	910
14,	8.60	8190	3.35	1292	3.40	1335	3.65	1555	2.15	339	3.20	1165	2.05	279	2.05	279	3.00	995	3.70	1600	3.10	1080	2.95	952
15,	7.20	6230	4.00	1900	3.80	1695	4.20	2110	2.10	308	3.00	995	2.05	279	2.00	250	10.10	10290	4.40	2340	2.95	952	3.65	1555
16,	5.80	4268	3.65	1555	3.70	1600	4.00	1900	2.10	308	2.75	790	1.95	225	1.95	225	9.70	9730	4.10	2005	2.85	870	6.45	5180
17,	4.75	2780	3.45	1377	3.65	1555	3.80	1695	2.05	279	2.85	870	1.85	180	1.90	202	5.80	4268	4.00	1900	2.90	910	5.50	3842
18,	4.00	1900	3.20	1165	3.60	1510	3.70	1600	2.05	279	8.20	7630	1.75	140	1.90	202	4.40	2340	6.20	4830	4.45	2400	4.85	2920
19,	3.55	1465	3.00	995	3.75	1647	3.60	1510	2.00	250	5.10	3276	1.70	124	1.85	180	4.20	2110	5.20	3417	4.30	2225	4.05	1952
20,	3.20	1165	2.80	830	4.80	2850	3.90	1795	1.90	202	3.90	1795	1.70	124	1.70	124	4.30	2225	4.40	2340	3.70	1600	3.85	1745
21,	3.20	1165	2.80	830	4.40	2340	3.90	1795	2.00	250	3.45	1377	1.70	124	1.70	124	4.40	2340	4.10	2005	3.55	1465	3.75	1647
22,	3.20	1165	2.70	750	4.10	2005	4.05	1952	2.00	250	3.00	995	1.70	124	1.60	94	4.40	2340	3.80	1695	3.50	1420	3.85	1745
23,	3.15	1122	2.70	750	3.90	1795	4.55	2520	2.00	250	2.80	830	1.70	124	1.50	73	3.85	1745	3.90	1795	3.35	1292	3.80	1695
24,	3.10	1080	2.75	790	3.75	1647	4.15	2058	2.25	405	2.65	711	1.70	124	1.40	50	3.50	1420	3.70	1600	3.30	1250	4.05	1952
25,	3.05	1037	2.85	870	3.60	1510	3.95	1847	2.15	339	2.50	595	1.70	124	1.60	94	3.00	995	3.45	1377	3.15	1122	3.95	1847
26,	3.30	1250	3.20	1165	3.50	1420	3.75	1647	2.05	279	3.60	1510	1.70	124	2.00	250	2.90	910	3.40	1335	3.10	1080	3.95	1847
27,	4.80	2850	4.00	1900	3.40	1335	3.50	1420	1.95	225	4.50	2460	1.70	124	2.60	672	2.80	830	3.20	1165	3.10	1080	6.95	5880
28,	4.90	2990	3.75	1647	3.35	1292	3.30	1250	1.90	202	3.90	1795	1.70	124	2.90	910	3.40	1335	3.00	995	3.00	995	5.05	3205
29,	5.55	3913	------	------	3.30	1250	3.15	1122	1.90	202	3.40	1335	1.70	124	7.50	6650	6.00	4550	2.90	910	3.00	995	4.40	2340
30,	12.65	13860	------	------	3.20	1165	2.90	910	2.00	250	3.35	1292	1.70	124	7.60	6790	5.65	3984	2.70	750	2.95	952	3.85	1745
31,	7.15	6160	------	------	3.20	1165	------	------	2.10	308	------	------	1.70	124	9.65	9660	------	------	2.80	830	------	------	6.10	4690

ESTIMATED MONTHLY DISCHARGE OF YOUGHIOGHENY RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

(Drainage area 435 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1904.					
September,	81	42	51	0.117	------------
October,	124	28	54	.124	.143
November,	50	35	45	.102	.114
December,	2990	50	503	1.156	1.333
1905.					
January,	5040	308	791	1.818	2.096
February,	------------	------------	929	2.136	2.224
March,	10500	910	3809	8.756	10.095
April,	1847	595	932	2.143	2.391
May,	1952	250	696	1.600	1.845
June,	2710	308	893	2.053	2.290
July,	2850	279	1007	2.315	2.669
August,	2460	250	696	1.600	1.845
September,	1647	94	445	1.023	1.141
October,	4760	81	666	1.531	1.765
November,	3700	250	620	1.425	1.589
December,	7420	370	1401	3.221	3.713
The year,	10500	81	1074	2.468	33.663
1906.					
January,	10150	595	1792	4.200	4.842
February,	711	202	408	.938	.977
March,	8190	595	1684	3.871	4.463
April,	5950	1080	2356	5.416	6.043
May,	1250	160	533	1.225	1.412
June,	3417	279	813	1.869	2.085
July,	830	124	275	.632	.728
August,	7630	202	1238	2.846	3.281
September,	250	94	156	.359	.401
October,	518	140	271	.623	.718
November,	2340	140	526	1.209	1.349
December,	7490	441	2252	5.177	5.968
The year,	10150	94	1025	2.364	32.267
1907.					
January,	13860	750	4150	9.540	10.999
February,	5040	672	1256	2.887	3.006
March,	22650	633	3981	9.152	10.551
April,	3558	370	1121	2.577	2.875
May,	7700	711	1470	3.379	3.896
June,	3913	370	1473	3.386	3.778
July,	5390	202	1553	3.570	4.116
August,	1900	202	678	1.559	1.798
September,	711	180	359	.825	.920
October,	1250	180	453	1.041	1.200
November,	5600	339	1543	3.547	3.958
December,	6300	479	2261	5.198	5.993
The year,	22650	180	1691	3.888	53.090

ESTIMATED MONTHLY DISCHARGE OF YOUGHIOGHENY RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

(Drainage area 435 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1908.					
January,	5180	556	1451	3.336	3.846
February,	17150	633	2023	4.650	5.015
March,	11550	750	3892	8.947	10.315
April,	6300	518	1742	4.005	4.468
May,	10500	595	2762	6.350	7.321
June,	952	94	321	.738	.824
July,	556	70	152	.349	.403
August,	479	50	114	.262	.302
September,	70	23	425	.097	.108
October,	35	28	31	.071	.082
November,	50	35	39	.090	.100
December,	830	28	146	.336	.387
The year,	17150	23	1060	2.436	33.171
1909.					
January,	2920	140	763	1.754	2.022
February,	7490	405	1910	4.391	4.572
March,	2580	633	1377	3.166	3.650
April,	6230	790	1916	4.404	4.913
May,	1695	250	677	1.555	1.793
June,	3629	250	1342	3.085	3.442
July,	370	70	139	.320	.369
August,	1420	50	287	.660	.761
September,	595	94	177	.407	.454
October,	3135	50	353	.811	.935
November,	308	160	220	.506	.565
December,	1335	160	353	.811	.935
The year,	7490	50	793	1.822	24.411
1910.					
January,	12810	405	2762	6.349	7.320
February,	6300	250	1792	4.120	4.290
March,	6020	225	1201	2.761	3.183
April,	3913	160	644	1.480	1.651
May,	1037	370	598	1.375	1.585
June,	13230	479	2031	4.669	5.209
July,	405	70	225	0.517	0.596
August,	94	50	66	0.152	0.175
September,	339	42	103	0.237	0.265
October,	50	35	41	0.094	0.108
November,	160	50	70	0.161	0.180
December,	5670	160	784	1.802	2.077
The year,	13230	35	860	1.976	26.639
1911.					
January,	13860	672	3176	7.301	8.417
February,	3276	750	1379	3.170	3.301
March,	2850	1165	1515	3.483	4.016
April,	9450	910	2333	5.363	5.983
May,	995	202	408	.938	1.082
June,	7630	160	1180	2.713	3.027
July,	830	124	302	.694	.800
August,	9660	50	1046	2.405	2.772
September,	10290	830	2292	5.269	5.879
October,	5250	750	2306	5.301	6.111
November,	2400	556	1171	2.692	3.003
December,	5880	790	1878	4.317	4.977
The year,	13860	50	1582	3.637	49.368

CASSELMAN RIVER.

DESCRIPTION OF BASIN.

The Casselman river, the largest tributary of the Youghiogheny river drains an area of approximately 578 square miles, of which 480 lie in Pennsylvania and 98 in Maryland. Rising in two branches, the North and the South, in Garrett county, Maryland, which join in the above county about four miles south of the Mason and Dixon line, the stream flows northeasterly into Pennsylvania at Meyersdale, Somerset county, where it turns northwesterly to Rockwood and thence southwesterly to the Youghiogheny river, at Confluence, Somerset county, Penna. The North and South branches, respectively, are 13 and 8 miles long, and the main river, from their junction to its mouth, is 23 miles in length. Its course through Maryland and the southern part of Somerset county, Penna., lies through a fertile, rolling valley, between Negro and Meadow mountains, whose average width is about six miles. From Meyersdale to its mouth, the course of the stream becomes more confined, and the valley is steep and grows deeper toward its mouth. This river has a rapid fall throughout practically its entire length. The principal tributary is Laurel Hill creek, which enters the river just above its confluence with the Youghiogheny river. The valleys are largely under cultivation, while the hillsides and mountain tops are covered with second growth timber.

There are numerous small boroughs and villages in this drainage basin. Bituminous coal is being extensively mined, and with farming, is the principal industry. The drainage basin has been virtually deforested, but is rapidly being covered with second growth. A few of the tributaries of the Casselman river are used as sources for domestic supply.

The mean annual precipitation over this water shed is between 40 and 45 inches.

The discharge has been measured since September 15th, 1904, at Confluence, about one mile above the mouth.

OHIO BASIN—STATION NO. 30.

CASSELMAN RIVER AT CONFLUENCE, PA.

DESCRIPTION OF STATION.

This station was established by the United States Geological Survey on September 15th, 1904. On April 1st, 1907, this station was taken over by the Water Supply Commission of Pennsylvania, which has been operating it since that date. It is located on a two span, steel highway bridge about 500 yards from the railroad station at Confluence.

The channel is straight for 200 feet above and 500 feet below the station. The right bank is high and not subject to overflow, while the left bank is low and overflows during extreme high water. The bed is covered with boulders, with some vegetation. There are two channels at all stages and the current is swift.

Discharge measurements are taken from the upstream side of the bridge. The initial point for soundings is centre of bridge pin over right abutment on upstream side.

A standard chain gage is fastened to the upstream hand-rail. The length of chain from the bottom of weight to the marker is 21.40 feet. The elevation of zero is arbitrary datum. Bench mark No. 1 is a chiselled draft marked with paint on the right abutment on the downstream side; elevation, 17.88 feet above gage datum. Bench mark No. 2 is a cross on the top of lower chord of bridge near gage; elevation, 18.61 feet above gage datum. The gage is read once daily by Lloyd L. Mountain.

This station is of value chiefly for low water measurements as the discharge values for high gage readings are liable to be considerably in error owing to frequent backwater from the Youghiogheny river.

Since the establishment of this station 22 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF CASSELMAN RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

(Drainage area 450 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet	Sec.-ft.	
	1904.							
1	July 8,	Hoyt & Hall,	230	279	0.80	1.65	224	
2	Sept. 12,	Murphy,	194	123	0.36	1.50	44	
3	Sept. 27,	Grover,	220	107	0.27	1.49	29	
	1905.							
4	Mar. 11,	Murphy,	248	1186	3.11	6.16	3688	Influenced by back water from Yough. river.
5	Mar. 15,	Grover & Morse,	247	609	3.70	4.02	2253	
6	Mar. 15,	do.	230	576	3.74	3.89	2155	
7	Mar. 16,	do.	231	605	3.68	3.99	2230	
8	Mar. 28,	Murphy,	229	516	3.63	3.59	1870	
9	April 17,	Horton,	214	344	2.25	2.63	772	
10	April 22,	do.	228	559	3.54	3.73	1980	
11	June 6,	Bolster,	205	214	1.29	2.02	277	
12	Nov. 4,	Hanna & Grieve,	233	330	1.59	2.30	526	
	1906.							
13	May 25,	Follansbee & Waite,	212	166	1.06	1.87	175	
	1907.							
14	June 10,	Horton,	217	409	2.79	3.00	1140	
15	Aug. 15,	Padgett,	194	172	0.89	1.88	153	
	1908.							
16	Feb. 16,	Henshaw,	248	2170	4.10	10.18	8900	Surface measm't.
17	Feb. 16,	do.	248	1560	3.56	7.71	5560	Approx. one span estimated.
18	Feb. 17,	do.	228	1010	3.29	5.50	3320	0.2 & 0.8 depths.
19	Aug. 21,	Bolster,	219	148	0.57	1.65	85	
20	Sept. 25,	Langenheim,	69	68	0.19	1.33	13.2	Wading msmt.
	1909.							
21	June 12,	Scheidenhelm,	232	508	2.54	3.39	1292	
	1911.							
22	July 13,	Langenheim,	224	293	1.30	2.32	381	

DISCHARGE TABLE FOR CASSELMAN RIVER, AT CONFLUENCE, SOMERSET COUNTY, FROM SEPT. 16, 1904, TO Dec. 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.30	8	2.00	263	.70	855	.40	1585	.10	2405
.40	20	.10	340	.80	945	.50	1700	.20	2530
.50	37	.20	420	.90	1040	.60	1815	.30	2655
.60	61	.30	505	3.00	1140	.70	1930	.40	2780
.70	93	.40	590	.10	1250	.80	2045	.50	2910
.80	132	.50	675	.20	1360	.90	2165	.60	3040
..90	191	.60	765	.30	1470	4.00	2285	.70	3170

BACKWATER DISCHARGE TABLE FOR CASSELMAN RIVER, AT CONFLUENCE, SOMERSET COUNTY, FROM SEPT. 16, 1904, TO DEC. 31, 1911.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
4.00	2280	.90	4560	.80	8390	.60	12190	.40	15995
.10	2380	7.00	4680	.90	8525	.70	12325	.50	16130
.20	2475	.10	4800	10.00	8660	.80	12465	.60	16265
.30	2565	.20	4925	.10	8795	.90	12600	.70	16400
.40	**2650**	.30	5050	.20	8930	13.00	12735	.80	16540
.50	2725	.40	5170	.30	9065	.10	12870	.90	16675
.60	2800	.50	5290	.40	9205	.20	13005	16.00	16810
.70	2870	.60	5420	.50	9340	.30	13140	.10	16945
.80	2930	.70	5545	.60	9475	.40	13280	.20	17080
.90	2995	.80	5675	.70	9610	.50	13415	.30	17215
5.00	3060	.90	5810	.80	9745	.60	13550	.40	17355
.10	3115	8.00	5950	.90	9880	.70	13685	.50	17490
.20	3165	.10	6080	11.00	10020	.80	13820	.60	17625
.30	3215	.20	6220	.10	10155	.90	13955	.70	17760
.40	3270	.30	6355	.20	10290	14.00	14095	.80	17895
.50	3325	.40	6490	.30	10425	.10	14230	.90	18030
.60	3375	.50	6625	.40	10560	.20	14365	17.00	18170
.70	3430	.60	6760	.50	10695	.30	14500	.10	18305
.80	**3500**	.70	6895	.60	10835	.40	14635	.20	18440
.90	3570	.80	7030	.70	10970	.50	14770	.30	18575
6.00	**3640**	.90	7165	.80	11105	.60	14910	.40	18710
.10	3710	9.00	7300	.90	11240	.70	15045	.50	18845
.20	3780	.10	7435	12.00	11375	.80	15180	.60	18985
.30	3875	.20	7575	.10	11510	.90	15315	.70	19120
.40	3970	.30	7710	.20	11650	15.00	15450	.80	19255
.50	4080	.40	7845	.30	11785	.10	15585	.90	19490
.60	4200	.50	7980	.40	11920	.20	15725	18.00	19525
.70	4320	.60	8115	.50	12055	.30	15860	.10	19660
.80	4440	.70	8250						

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CASSELMAN RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1904.	SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	1.40	20	1.45	28	1.55	49
2,	------	------	1.40	20	1.45	28	1.55	49
3,	------	------	1.40	20	1.45	28	1.55	49
4,	------	------	1.35	14	1.45	28	1.55	49
5,	------	------	1.35	14	1.40	20	1.55	49
6,	------	------	1.35	14	1.40	20	1.55	49
7,	------	------	1.35	14	1.40	20	1.55	49
8,	------	------	1.40	20	1.40	20	1.55	49
9,	------	------	1.45	28	1.40	20	1.55	49
10,	------	------	1.45	28	1.40	20	1.55	49
11,	------	------	1.50	37	1.40	20	a	------
12,	------	------	1.50	37	1.40	20	a	------
13,	------	------	1.50	37	1.40	20	a	------
14,	------	------	1.60	61	1.40	20	a	------
15,	------	------	1.60	61	1.40	20	a	------
16,	1.55	49	1.55	49	1.40	20	a	------
17,	1.55	49	1.50	37	1.45	28	b1.60	61
18,	1.50	37	1.50	37	1.45	28	a	------
19,	1.45	28	1.45	28	1.45	28	a	------
20,	1.45	28	1.40	20	1.50	37	a	------
21,	1.55	49	1.50	37	1.50	37	a	------
22,	1.50	37	1.50	37	1.50	37	a	------
23,	1.45	28	1.50	37	1.50	37	a	------
24,	1.45	28	1.50	37	1.55	49	b1.95	226
25,	1.45	28	1.50	37	1.55	49	c3.35	1530
26,	1.50	37	1.50	37	1.55	49	2.70	885
27,	1.50	37	1.45	28	1.55	49	2.95	1090
28,	1.45	28	1.45	28	1.55	49	4.10	2405
29,	1.45	28	1.45	28	1.55	49	3.00	1140
30,	1.45	28	1.45	28	1.55	49	2.05	301
31,	------	------	1.45	28	------	------	2.15	380

a. Ice.
b. Hole cut in ice and gage read to water surface.
c. Ice gone out.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CASSELMAN RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1905.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.15	380	------	------	2.90	1040	2.70	855	2.40	590	2.20	420	2.40	590	2.60	765	2.20	420	1.70	93	2.50	675	3.20	1360
2,	2.10	340	------	------	------	------	2.60	765	2.25	460	2.30	505	2.95	1090	2.25	460	2.10	340	1.80	132	2.40	590	3.00	1140
3,	2.40	590	------	------	------	------	2.55	720	2.25	460	2.20	420	2.55	720	2.10	340	2.10	340	2.50	675	2.30	505	8.40	6490
4,	2.35	545	2.60	765	2.90	1040	2.50	675	2.30	505	2.10	340	2.40	590	2.00	263	2.10	340	2.25	460	2.30	505	5.10	3115
5,	2.30	505	------	------	------	------	2.50	675	2.35	545	2.05	301	2.30	505	2.30	505	2.20	420	2.00	263	2.30	505	4.35	2715
6,	2.20	420	------	------	------	------	2.55	720	2.55	720	2.00	263	2.40	590	2.25	460	2.25	460	1.80	132	2.30	505	3.30	1470
7,	2.15	380	------	------	3.50	1700	2.65	910	2.50	675	2.50	675	3.25	1415	2.10	340	2.35	545	1.75	112	2.30	505	3.00	1140
8,	2.10	340	2.70	855	4.60	2800	2.70	855	2.45	630	2.75	900	3.60	1815	2.00	263	2.65	810	1.70	93	2.30	505	2.90	1040
9,	2.10	340	------	------	6.85	4500	2.70	855	2.40	590	2.60	765	2.90	1040	1.95	226	2.85	990	1.70	93	2.25	460	2.80	945
10,	2.10	340	------	------	7.30	5050	2.75	900	2.30	505	2.50	675	2.60	765	1.90	191	2.95	1090	1.65	76	2.20	420	2.70	855
11,	2.15	380	2.70	855	5.60	3375	3.50	1700	2.25	460	5.70	3430	3.10	1250	3.20	1360	4.85	2960	1.95	226	2.15	380	2.60	765
12,	2.35	545	------	------	4.80	2930	3.40	1585	2.55	720	4.10	2405	2.75	900	2.80	945	3.80	2045	2.80	945	2.15	380	2.50	675
13,	4.70	3170	------	------	4.50	2725	3.05	1195	2.40	590	3.35	1530	2.80	945	2.40	590	2.90	1040	2.35	545	2.10	340	2.40	590
14,	3.80	2045	------	------	4.25	2520	2.85	990	2.75	900	3.00	1140	2.50	675	2.30	505	2.50	675	2.15	380	2.10	340	2.30	505
15,	2.95	1090	2.90	1040	4.00	2285	2.80	945	3.40	1585	2.65	810	2.30	505	5.40	3270	2.20	420	2.05	301	2.10	340	2.20	420
16,	2.50	675	------	------	4.00	2285	2.70	855	3.20	1360	2.45	630	2.20	420	4.25	2590	2.20	420	2.00	263	2.20	420	2.15	380
17,	2.45	630	------	------	5.50	3325	2.60	765	3.10	1250	2.40	590	2.10	340	3.20	1360	2.20	420	1.95	226	2.25	460	2.15	380
18,	2.40	590	2.90	1040	6.30	3875	2.55	720	2.80	945	2.30	505	2.00	263	2.80	945	2.15	380	1.90	191	2.25	460	2.20	420
19,	2.40	590	------	------	9.00	7300	2.50	675	2.65	810	2.20	420	2.00	263	2.50	675	2.10	340	2.15	380	2.15	380	2.15	380
20,	2.35	545	------	------	8.50	6625	2.65	810	2.50	675	2.20	420	2.90	1040	2.35	545	2.05	301	6.10	3710	2.05	301	2.10	340
21,	2.35	545	------	------	10.40	9205	2.95	1090	2.40	590	2.10	340	2.35	545	2.20	420	2.00	263	3.70	1930	2.00	263	4.00	2285
22,	2.25	460	2.90	1040	7.50	5290	3.70	1930	2.35	545	3.35	1530	2.20	420	2.20	420	1.95	226	3.00	1140	2.00	263	4.30	2655
23,	2.25	460	------	------	5.25	3190	3.20	1560	2.25	460	3.30	1470	2.10	340	2.10	340	1.90	191	2.70	855	2.00	263	3.70	1930
24,	2.25	460	------	------	4.40	2650	2.90	1040	2.20	420	3.70	1930	2.50	675	2.00	263	1.90	191	2.60	765	2.00	263	3.40	1585
25,	2.20	420	2.90	1040	4.90	2995	2.80	945	2.15	380	3.20	1360	2.25	460	3.20	1360	1.85	160	2.50	675	1.95	226	3.00	1140
26,	2.20	420	------	------	4.15	2465	2.70	855	2.10	340	2.90	1040	2.10	340	3.00	1140	1.85	160	3.20	1360	1.95	226	2.80	945
27,	------	------	------	------	3.95	2225	2.75	900	2.40	590	2.80	945	2.05	301	2.50	675	1.80	132	3.00	1140	2.00	263	2.70	855
28,	------	------	------	------	3.50	1700	2.75	900	2.20	420	2.50	675	2.00	263	2.30	505	1.80	132	2.80	945	2.35	545	2.60	765
29,	------	------	------	------	3.20	1360	2.65	810	2.00	263	2.30	505	2.10	340	2.20	420	1.80	132	2.60	765	5.65	3405	3.00	1140
30,	------	------	------	------	3.00	1140	2.50	675	2.00	263	2.20	420	2.60	765	2.55	720	1.80	132	2.55	720	4.75	2900	2.70	855
31,	------	------	------	------	2.85	990	------	------	2.15	380	------	------	3.00	1140	2.30	505	------	------	2.50	675	------	------	2.50	675

Note.—River frozen January 27 to March 6, ice 0.6 feet to 0.8 feet thick. During this time gage was read to top of ice. On February 15, the water overflowed ice and froze under gage, increasing the reading 0.2 feet.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CASSELMAN RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1906.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.50	675	2.50	675	2.00	263	5.20	3165	2.50	675	2.05	301	1.80	132	2.00	263	2.10	340	1.90	191	2.00	263	2.20	420
2,	2.45	630	2.35	545	2.15	380	4.50	2725	2.70	855	2.10	340	1.90	191	1.95	226	2.15	380	2.00	263	2.00	263	2.15	380
3,	2.70	855	2.45	630	2.35	545	4.40	2650	2.75	900	2.05	301	1.80	132	3.85	2105	2.10	340	1.95	226	1.90	191	2.30	505
4,	4.55	2975	2.30	505	2.90	1040	4.50	2725	2.60	765	2.05	301	1.85	160	2.80	945	2.00	263	1.90	191	1.80	132	2.20	420
5,	3.70	1930	2.45	630	2.70	855	4.90	2995	2.60	765	2.00	263	1.80	132	2.40	590	1.95	226	2.10	340	1.80	132	2.20	420
6,	3.05	1195	2.30	505	2.50	675	6.50	4080	2.45	630	4.10	2405	1.75	112	2.15	380	1.90	191	2.10	340	1.80	132	3.35	1530
7,	2.65	810	2.20	420	2.60	765	4.70	2870	2.50	675	4.90	2995	1.75	112	2.50	675	1.85	160	2.20	420	1.75	112	3.60	1815
8,	2.80	940	2.10	340	2.55	720	3.85	2105	2.40	590	3.35	1530	1.70	93	4.65	2835	1.80	132	2.10	340	1.75	112	2.85	990
9,	2.50	675	2.00	263	2.55	720	3.90	2165	2.30	505	2.70	855	1.60	61	7.80	5675	1.80	132	1.95	226	1.75	112	2.70	855
10,	2.25	460	2.05	301	2.50	675	5.05	3090	2.45	630	2.40	590	1.60	61	8.80	7030	2.00	263	1.90	191	1.75	112	6.50	4080
11,	2.65	810	2.05	301	2.45	630	4.20	2475	2.35	545	2.25	460	1.65	76	4.90	2995	2.00	263	1.90	191	1.80	132	7.10	4800
12,	2.60	765	2.10	340	2.70	855	3.60	1815	2.20	420	2.20	420	1.60	61	3.65	1875	1.80	132	1.85	160	1.80	132	4.50	2725
13,	2.60	765	2.15	380	2.60	765	3.30	1470	2.25	460	2.15	380	1.60	61	3.20	1360	1.85	160	1.85	160	1.85	160	3.65	1875
14,	2.50	675	2.00	263	2.60	765	3.10	1250	2.25	460	2.10	340	1.60	61	2.80	945	2.00	263	1.85	160	1.85	160	3.35	1530
15,	2.45	630	2.10	340	2.60	765	4.70	3170	2.10	340	2.10	340	1.60	61	2.60	765	2.00	263	1.80	132	1.90	191	3.20	1360
16,	2.65	810	2.10	340	2.45	630	4.00	2285	2.15	380	2.05	301	1.60	61	2.45	630	1.90	191	1.80	132	1.90	191	3.80	2045
17,	2.90	1040	2.05	301	2.55	720	3.50	1700	2.15	380	2.05	301	1.60	61	2.45	630	1.75	112	1.80	132	1.95	226	5.05	3090
18,	3.30	1470	2.05	301	2.50	675	3.20	1360	2.00	263	2.00	263	1.70	93	2.40	590	1.90	191	1.80	132	2.70	855	5.10	3115
19,	3.85	2105	2.00	263	2.50	675	3.00	1140	2.10	340	2.00	263	1.70	93	3.60	1815	1.90	191	1.80	132	3.10	1250	3.55	1760
20,	3.15	1305	2.10	340	2.45	630	2.80	945	2.05	301	2.10	340	1.65	76	4.00	2285	1.85	160	2.60	765	3.25	1415	3.40	1585
21,	3.20	1360	2.20	420	2.35	545	3.10	1250	1.95	226	2.40	590	1.60	61	4.10	2405	1.80	132	2.45	630	2.90	1040	3.20	1360
22,	3.30	1470	2.70	855	2.40	590	3.15	1305	2.00	263	2.20	420	1.75	112	3.30	1470	1.80	132	2.35	545	2.60	765	3.00	1140
23,	9.90	8525	2.30	505	2.35	545	3.25	1415	1.95	226	2.25	460	2.60	765	2.95	1090	1.75	112	2.25	460	2.40	590	2.75	900
24,	4.70	2870	2.20	420	2.30	505	3.10	1250	1.80	132	2.15	380	2.15	380	2.70	855	1.75	112	2.15	380	2.35	545	2.60	765
25,	4.10	2380	2.25	460	2.35	545	2.90	1040	1.85	160	2.05	301	1.90	191	2.90	1040	1.70	93	2.05	301	2.30	505	2.50	675
26,	3.50	1700	2.25	460	2.30	505	3.20	1360	1.85	160	2.00	263	1.75	112	2.65	810	1.70	93	2.00	263	2.25	460	2.50	675
27,	3.20	1360	2.20	420	4.80	2930	3.20	1360	1.80	132	1.95	226	1.75	112	2.60	765	1.75	112	2.00	263	2.20	420	2.60	765
28,	3.05	1190	2.15	380	7.40	5170	2.80	945	2.10	340	1.90	191	1.70	93	2.55	720	1.80	132	2.00	263	2.20	420	2.90	1040
29,	2.90	1040	------	------	5,60	3375	2.85	990	2.15	380	1.90	191	1.70	93	2.40	590	1.70	93	2.05	301	2.15	380	4.00	2285
30,	2.65	810	------	------	7.00	4680	2.50	675	2.10	340	1.80	132	1.90	191	2.30	505	1.75	112	2.00	263	2.10	340	4.70	2870
31,	2.70	855	------	------	7.70	5545	------	------	2.10	340	------	------	2.00	263	2.20	420	------	------	2.00	263	------	------	7.50	5290

Note.—Discharge probably unaffected by ice conditions during 1906.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CASSELMAN RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1907.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	5.8	3500	2.5	675	2.5	675	2.65	810	3.1	1250	3.1	1250	2.4	590	2.2	420	1.8	132	1.9	191	1.95	226	2.9	1040
2,	4.3	2565	2.7	850	3.5	1700	2.6	765	2.9	1040	5.55	3350	2.85	990	2.1	340	1.75	112	1.85	160	1.9	191	2.85	990
3,	3.8	2045	5.3	3215	3.2	1360	2.55	720	3.0	1140	4.55	2765	2.5	675	2.0	263	1.9	191	1.8	132	4.95	3030	2.8	945
4,	3.5	1700	3.7	1930	3.0	1140	2.5	675	3.3	1470	3.65	1875	2.25	460	2.0	263	2.2	420	1.85	160	4.1	2405	2.75	900
5,	3.3	1470	3.25	1415	2.9	1040	2.45	630	3.1	1250	4.85	2960	2.3	505	2.0	263	2.2	420	1.9	191	3.6	1815	2.7	855
6,	3.05	1195	3.1	1250	2.9	1040	2.45	630	2.95	1090	4.55	2765	2.3	505	2.45	630	2.0	263	2.0	263	3.3	1470	2.6	765
7,	3.05	1195	2.95	1090	2.9	1040	2.55	720	3.2	1360	3.65	1875	2.3	505	2.4	590	1.85	160	1.95	226	6.0	3640	2.35	545
8,	3.5	1700	2.85	990	2.8	945	2.5	675	3.25	1415	3.7	1930	2.25	460	2.2	420	1.8	132	1.9	191	4.15	2465	2.45	630
9,	6.0	3640	2.75	900	2.7	855	2.45	630	8.55	6695	3.3	1470	2.15	380	2.2	420	1.8	132	2.25	460	3.65	1875	2.6	765
10,	4.2	2530	2.7	855	2.6	765	2.85	990	5.1	3115	3.05	1195	2.2	420	2.15	380	1.8	132	2.1	340	3.1	1250	6.2	3780
11,	3.5	1700	2.6	765	2.8	945	2.9	1040	4.15	2465	6.25	3830	2.55	720	2.15	380	3.0	1140	2.05	301	2.9	1040	6.1	3710
12,	11.2	10290	2.55	720	3.0	1140	3.1	1250	3.8	2045	4.45	2690	4.95	3030	2.1	340	2.8	945	2.0	263	2.75	900	5.7	3430
13,	7.5	5290	2.5	675	16.3	17215	3.0	1140	3.35	1530	4.75	2900	3.25	1415	2.05	301	2.4	590	2.35	545	2.6	765	5.55	3350
14,	11.25	10360	2.5	675	18.1	19660	2.95	1090	3.15	1305	6.55	4140	2.7	855	2.0	263	2.2	420	2.0	263	2.55	720	5.25	3190
15,	8.15	6150	2.75	900	8.3	6355	2.9	1040	3.0	1140	5.15	3140	2.5	675	1.9	191	2.05	301	2.1	340	2.45	630	4.1	2405
16,	5.85	3535	2.7	855	6.1	3710	3.4	1585	2.9	1040	3.75	1990	2.4	590	1.8	132	2.0	263	2.0	263	2.35	545	3.95	2225
17,	5.4	3270	2.65	810	4.5	2725	3.3	1470	2.8	945	3.45	1645	3.35	1530	1.9	191	2.0	263	1.95	226	2.3	505	3.75	1990
18,	6.4	3970	2.6	765	3.9	2165	3.2	1360	2.7	855	3.2	1360	3.8	2045	1.9	191	2.0	263	1.95	226	2.4	590	3.55	1760
19,	12.2	11650	2.8	945	14.2	14365	3.1	1250	2.85	990	3.05	1195	2.9	1040	1.9	191	2.15	380	1.95	226	2.95	1090	2.35	545
20,	9.0	7300	3.3	1470	10.4	9205	3.1	1250	4.4	2780	2.95	1090	2.5	675	1.8	132	2.15	380	1.9	191	2.7	855	2.4	590
21,	5.5	3325	2.95	1090	6.1	3710	3.05	1195	3.65	1875	2.85	990	2.3	505	1.75	112	2.1	340	1.85	160	2.55	720	2.5	675
22,	4.2	2530	2.7	855	5.1	3115	3.2	1360	3.5	1700	2.75	900	2.2	420	1.75	112	1.9	191	1.85	160	2.75	900	2.7	855
23,	3.5	1700	2.7	855	4.0	2285	3.2	1360	3.3	1470	3.2	1360	2.15	380	1.85	160	1.9	191	1.8	132	2.75	900	5.95	3605
24,	3.1	1250	2.7	855	3.55	1760	4.6	3040	3.2	1360	2.85	990	2.15	380	2.8	945	2.1	340	1.75	112	2.7	855	5.25	3190
25,	3.3	1470	2.6	765	3.3	1470	3.6	1815	3.05	1195	2.75	900	2.2	420	2.35	545	2.0	263	1.7	93	2.65	810	4.3	2565
26,	3.1	1250	2.5	675	3.1	1250	3.25	1415	3.3	1470	2.55	720	4.1	2405	2.2	420	1.95	226	1.75	112	2.7	855	3.7	1930
27,	2.9	1040	2.5	675	3.2	1360	3.25	1415	3.3	1470	2.45	630	3.5	1700	2.1	340	1.85	160	1.9	191	2.95	1090	3.4	1585
28,	2.9	1040	2.55	720	3.2	1360	3.2	1360	3.25	1415	2.3	505	2.55	720	2.0	263	1.8	132	2.5	675	3.1	1250	4.6	3040
29,	2.8	945	------	------	3.1	1250	3.15	1305	3.15	1305	2.4	590	2.4	590	1.9	191	1.75	112	2.25	460	3.35	1530	4.7	3170
30,	2.7	855	------	------	2.9	1040	3.1	1250	3.05	1195	2.45	630	2.3	505	1.85	160	1.9	191	2.1	340	2.95	1090	3.8	2045
31,	2.6	765	------	------	2.75	900	------	------	2.9	1040	------	------	2.15	380	1.8	132	------	------	2.0	263	------	------	3.6	1815

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CASSELMAN RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1, ------------	3.40	1585	2.60	765	2.65	810	3.80	2045	2.70	855	2.85	990	1.73	105	1.68	87	1.48	34	1.48	34	1.38	18	1.38	18
2, ------------	3.00	1140	2.55	720	6.80	4440	4.30	2655	2.60	765	2.65	810	1.73	105	1.58	56	1.48	34	1.48	34	1.38	18	1.38	18
3, ------------	2.80	945	2.50	675	6.30	3875	3.50	1700	2.55	720	2.50	675	1.73	105	1.58	56	1.43	25	1.48	34	1.38	18	1.43	25
4, ------------	2.75	900	2.40	590	4.65	2835	3.20	1360	2.85	990	2.40	590	1.73	105	1.53	44	1.43	25	1.48	34	1.38	18	1.43	25
5, ------------	2.60	765	2.30	505	4.50	2725	2.95	1090	6.85	4500	2.20	420	1.73	105	1.53	44	1.38	18	1.48	34	1.33	12	1.43	25
6, ------------	2.65	810	2.25	460	7.25	4990	3.10	1250	5.70	3430	2.20	420	1.73	105	1.53	44	1.38	18	1.43	25	1.33	12	1.43	25
7, ------------	2.45	630	2.45	630	10.60	9475	3.00	1140	10.30	9065	2.15	380	1.73	105	1.73	105	1.38	18	1.43	25	1.33	12	1.48	34
8, ------------	2.25	460	2.35	545	7.05	4740	3.90	2165	7.20	4925	2.10	340	1.73	105	1.68	87	1.38	18	1.43	25	1.33	12	1.58	56
9, ------------	2.50	675	2.35	545	9.35	7780	4.80	2930	5.20	3165	2.05	301	1.68	87	1.68	87	1.38	18	1.43	25	1.33	12	1.48	34
10, ------------	2.35	545	2.35	545	5.60	3375	3.80	2045	4.10	2405	1.98	249	1.68	87	1.58	56	1.33	12	1.38	18	1.33	12	1.53	44
11, ------------	2.40	590	2.45	630	4.60	2800	7.55	5355	3.60	1815	1.93	213	1.63	71	1.53	44	1.33	12	1.38	18	1.38	18	1.58	56
12, ------------	7.10	4800	2.55	720	4.75	2900	4.70	2870	3.25	1415	1.93	213	1.63	71	1.53	44	1.33	12	1.38	18	1.38	18	1.68	87
13, ------------	5.80	3500	3.10	1250	5.00	3060	3.90	2165	3.05	1195	1.93	213	1.63	71	1.48	34	1.33	12	1.38	18	1.38	18	1.63	71
14, ------------	4.80	2930	4.90	2995	5.40	3270	3.50	1700	3.00	1140	1.88	179	1.73	105	1.48	34	1.33	12	1.38	18	1.38	18	1.58	56
15, ------------	4.40	2650	16.00	16810	4.90	2995	3.20	1360	3.60	1815	2.10	340	1.83	150	1.43	25	1.33	12	1.38	18	1.38	18	1.68	87
16, ------------	3.30	1470	7.95	5880	5.00	3060	3.20	1360	3.10	1250	2.05	301	1.83	150	1.43	25	1.33	12	1.38	18	1.43	25	1.73	105
17, ------------	2.95	1090	5.05	3090	4.25	2520	3.00	1140	3.00	1140	1.98	249	1.78	124	1.43	25	1.33	12	1.38	18	1.43	25	1.88	179
18, ------------	2.90	1040	4.80	2930	4.60	2800	3.10	1250	3.00	1140	1.98	249	1.78	124	1.63	71	1.28	6	1.38	18	1.48	34	2.85	990
19, ------------	2.60	765	3.80	2045	11.30	10425	4.15	2465	3.30	1470	1.93	213	1.68	87	1.98	249	1.28	6	1.38	18	1.53	44	2.55	720
20, ------------	2.35	545	3.05	1195	6.25	3830	3.20	1360	4.60	2800	1.88	179	1.68	87	1.73	105	1.28	6	1.38	18	1.58	56	2.15	380
21, ------------	2.65	810	2.95	1090	4.50	2725	3.10	1250	5.30	3215	2.30	505	1.68	87	1.58	56	1.28	6	1.38	18	1.58	56	1.93	213
22, ------------	3.20	1360	2.90	1040	3.75	1990	3.00	1140	5.80	3500	2.25	460	1.93	213	1.53	44	1.28	6	1.38	18	1.58	56	1.88	179
23, ------------	3.25	1415	2.80	945	3.50	1700	2.95	1090	3.50	1700	2.15	380	1.83	150	1.53	44	1.28	6	1.38	18	1.53	44	1.88	179
24, ------------	2.85	990	2.70	855	3.50	1700	2.90	1010	3.55	1760	2.10	340	2.95	1090	1.58	56	1.33	12	1.38	18	1.53	44	1.88	179
25, ------------	2.55	720	2.55	720	3.05	1195	2.75	900	3.15	1305	2.20	420	2.90	1040	1.58	56	1.33	12	1.43	25	1.53	44	1.88	179
26, ------------	3.00	1140	2.60	765	2.95	1090	2.80	945	3.05	1195	1.98	249	2.65	810	1.53	44	1.28	6	1.43	25	1.48	34	1.78	124
27, ------------	3.15	1305	2.60	765	2.85	990	2.65	810	2.90	1040	1.88	179	2.45	630	1.53	44	1.28	6	1.43	25	1.43	25	1.68	87
28, ------------	3.20	1360	2.60	765	2.80	945	2.55	720	2.80	945	1.78	124	2.20	420	1.53	44	1.28	6	1.43	25	1.43	25	1.73	105
29, ------------	2.70	855	2.45	630	3.50	1700	2.55	720	3.00	1140	1.78	124	2.10	340	1.58	56	1.28	6	1.43	25	1.43	25	1.73	105
30, ------------	2.45	630	------	------	3.25	1415	2.40	590	4.00	2285	1.73	105	1.93	213	1.53	44	1.48	34	1.43	25	1.38	18	1.68	87
31, ------------	2.40	590	------	------	3.80	2045	------	------	3.00	1140	------	------	1.78	124	1.48	34	------	------	1.43	25	------	------	1.93	213

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CASSELMAN RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1909.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.83	150	2.00	263	3.30	1470	2.85	900	3.50	1700	2.15	380	2.00	263	1.63	71	1.78	124	1.53	44	1.93	213	1.83	150
2,	1.73	105	2.40	590	4.10	2405	2.80	945	3.30	1470	2.35	545	2.05	301	1.58	56	1.73	105	1.53	44	1.93	213	1.78	124
3,	1.93	213	2.30	505	4.50	2910	3.00	1140	3.10	1250	2.50	675	2.05	301	1.53	44	1.73	105	1.48	34	1.88	179	1.78	124
4,	1.83	150	2.40	590	4.55	2975	3.50	1700	3.10	1250	2.35	545	1.98	249	1.48	34	1.73	105	1.48	34	1.88	179	1.78	124
5,	1.78	124	2.60	765	4.10	2405	3.45	1045	3.00	1140	3.25	1415	1.98	249	1.48	34	1.88	179	1.48	34	1.88	179	1.78	124
6,	1.88	179	2.85	990	3.50	1700	3.35	1530	2.75	900	4.10	2405	1.88	179	1.43	25	1.83	150	1.48	34	1.83	150	1.78	124
7,	1.83	150	2.65	810	3.60	1815	3.05	1195	2.55	720	3.10	1250	1.83	150	1.43	25	1.73	105	1.43	25	1.73	105	1.93	213
8,	1.78	124	2.40	590	4.00	2285	3.00	1140	2.55	720	3.05	1195	1.78	124	1.43	25	1.68	87	1.43	25	1.83	150	2.45	630
9,	1.98	249	2.40	590	3.75	1990	2.80	945	2.55	720	3.05	1195	1.73	105	1.43	25	1.68	87	1.43	25	1.78	124	2.30	505
10,	1.98	249	2.65	810	3.90	2165	2.80	945	2.60	765	3.05	1195	1.68	87	1.38	18	1.63	71	1.38	18	1.78	124	2.15	380
11,	1.88	179	3.60	1815	3.40	1585	2.75	900	2.50	675	4.15	2465	1.68	87	1.38	18	1.63	71	1.58	56	1.78	124	2.10	340
12,	1.98	249	3.06	1815	3.10	1250	2.65	810	2.30	505	3.25	1415	1.68	87	1.38	18	1.68	87	2.35	545	1.78	124	2.00	263
13,	2.10	340	3.50	1700	2.90	1040	2.80	945	2.35	545	2.90	1040	1.68	87	1.38	18	1.68	87	2.15	380	1.78	124	2.20	420
14,	2.05	301	3.35	1530	2.95	1090	6.30	3875	2.30	505	2.85	990	1.73	105	1.38	18	1.68	87	1.83	150	1.78	124	3.50	1700
15,	3.50	1700	3.30	1470	2.85	990	4.50	2725	2.25	460	2.65	810	1.73	105	1.48	34	1.63	71	1.83	150	1.88	179	2.65	810
16,	3.25	1415	5.40	3270	2.75	900	3.90	2165	2.20	420	2.55	720	1.68	87	3.65	1875	1.58	56	1.78	124	1.88	179	2.55	720
17,	2.35	545	4.10	2405	2.65	810	3.25	1415	2.10	340	2.60	765	1.68	87	3.05	1195	1.58	56	1.73	105	1.88	179	2.30	505
18,	2.35	545	3.35	1530	2.55	720	3.05	1195	2.10	340	2.35	545	1.68	87	2.80	945	1.53	44	1.68	87	1.88	179	2.30	505
19,	2.15	380	3.25	1415	2.65	810	3.00	1140	2.05	301	2.35	545	1.68	87	2.60	765	1.53	44	1.83	150	1.88	179	2.20	420
20,	2.40	590	3.35	1530	3.00	1140	3.70	1930	2.05	301	2.30	505	1.68	87	2.30	505	1.53	44	1.83	150	1.83	150	2.00	263
21,	2.40	590	3.00	1140	2.80	945	5.30	3215	2.20	420	2.20	420	1.63	71	3.55	1760	1.53	44	1.78	124	1.83	150	2.05	301
22,	2.60	765	2.85	990	2.80	945	6.80	4440	2.20	420	2.30	505	1.63	71	2.55	720	1.53	44	1.78	124	1.83	150	1.98	249
23,	3.50	1700	3.25	1415	2.50	675	5.45	3300	2.20	420	2.25	460	1.68	87	2.30	505	1.58	56	2.00	263	1.83	150	1.88	179
24,	4.60	3040	7.90	5810	2.50	675	4.50	2725	2.15	380	2.25	460	2.15	380	2.00	263	1.68	87	3.50	1700	1.83	150	1.88	179
25,	3.50	1700	5.70	3430	2.60	765	3.75	1990	2.10	340	2.25	460	2.05	301	1.98	249	1.68	87	3.00	1140	1.83	150	2.05	301
26,	3.30	1470	4.10	2405	2.90	1040	3.70	1930	2.05	301	2.20	420	1.98	249	1.88	179	1.68	87	2.30	505	1.78	124	2.15	380
27,	2.55	720	3.90	2165	3.00	1140	3.10	1250	2.10	340	2.60	765	1.88	179	1.88	179	1.68	87	2.10	340	1.78	124	2.20	420
28,	2.40	590	3.80	2045	3.00	1140	3.20	1360	2.40	590	2.45	630	1.78	124	1.83	150	1.63	71	2.10	340	1.78	124	2.20	420
29,	2.20	420	------	------	3.05	1195	3.30	1470	2.20	420	2.30	505	1.68	87	1.93	213	1.63	71	2.10	340	1.83	150	2.15	380
30,	2.05	301	------	------	3.00	1140	3.40	1585	2.10	340	2.20	420	1.68	87	1.93	213	1.58	56	2.05	301	1.83	150	2.25	460
31,	1.95	226	------	------	2.90	1040	------	------	2.10	340	------	------	1.63	71	1.88	179	------	------	1.98	249	------	------	2.25	460

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CASSELMAN RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.30	505	2.75	900	6.95	4620	2.05	301	2.75	900	2.70	855	2.20	420	1.56	51	1.71	97	1.36	15	1.46	30	1.66	80
2,	3.20	1360	2.75	900	6.25	3830	2.05	301	2.65	810	3.30	1470	2.20	420	1.56	51	1.76	116	1.36	15	1.46	30	1.66	80
3,	10.15	8862	2.80	945	5.25	3190	1.95	226	2.50	675	3.15	1305	2.15	380	1.51	39	1.76	116	1.36	15	1.46	30	1.66	80
4,	6.05	3675	2.75	900	4.80	2930	2.00	263	2.45	630	3.00	1140	2.15	380	1.51	39	2.01	271	1.31	9	1.41	22	1.66	80
5,	3.70	1930	2.45	630	4.55	2765	2.05	301	2.40	590	3.15	1305	2.20	420	1.46	30	2.01	271	1.31	9	1.41	22	1.66	80
6,	4.50	2910	2.20	420	4.45	2690	2.00	263	2.30	505	4.05	2345	2.10	340	1.46	30	1.86	167	1.31	9	1.41	22	1.86	167
7,	4.60	3040	2.10	340	4.00	2280	2.00	263	2.30	505	3.35	1530	2.05	301	1.46	30	1.76	116	1.31	9	1.41	22	1.86	167
8,	3.80	2045	1.95	226	3.60	1815	1.95	226	2.20	420	2.95	1090	2.00	263	1.46	30	1.66	80	1.46	30	1.41	22	1.86	167
9,	3.20	1360	2.55	720	3.40	1585	2.00	263	2.40	590	2.90	1040	2.05	301	1.46	30	1.61	64	1.46	30	1.41	22	1.86	167
10,	2.75	900	2.85	990	3.10	1250	1.95	226	2.35	545	3.70	1930	2.10	340	1.46	30	1.56	51	1.41	22	1.41	22	*1.86	167
11,	2.55	720	2.65	810	2.90	1040	1.95	226	2.40	590	3.85	2105	2.05	301	1.46	30	1.56	51	1.41	22	1.41	22	*1.86	167
12,	2.70	855	2.55	720	2.85	990	1.92	205	2.95	1090	3.65	1875	2.00	263	1.46	30	1.56	51	1.41	22	1.41	22	*1.90	191
13,	2.45	630	2.40	590	2.70	855	1.92	205	2.80	945	3.30	1470	1.95	226	1.46	30	1.56	51	1.41	22	1.41	22	*1.90	191
14,	2.40	590	2.40	590	2.70	855	1.87	173	2.95	1090	3.10	1250	2.15	380	1.46	30	1.56	51	1.36	15	1.41	22	*1.90	191
15,	2.35	545	2.35	545	2.55	720	1.87	173	2.70	855	2.85	990	2.10	340	1.56	51	1.56	51	1.36	15	1.41	22	*1.90	191
16,	2.35	545	4.45	2690	2.50	675	1.87	173	2.55	720	2.75	900	1.96	234	1.56	51	1.51	39	1.36	15	1.41	22	*1.90	191
17,	2.40	590	5.15	3140	2.50	675	1.87	173	2.45	630	3.35	1530	1.86	167	1.51	39	1.51	39	1.36	15	1.41	22	*1.90	191
18,	a 9.85	8458	4.40	2650	2.35	545	1.82	144	2.30	505	3.00	1140	1.81	138	1.51	39	1.51	39	1.36	15	1.41	22	*1.90	191
19,	7.00	4680	3.45	1645	2.35	545	1.82	144	2.40	590	12.60	12190	1.76	116	1.66	80	1.51	39	1.36	15	1.51	39	*2.00	263
20,	4.15	2428	3.00	1140	2.55	720	1.82	144	2.30	505	6.35	3922	1.71	97	1.61	64	1.46	30	1.36	15	1.51	39	*2.00	263
21,	6.85	4500	3.35	1530	2.50	675	1.87	173	2.30	505	4.15	2428	1.61	64	1.61	64	1.46	30	1.36	15	1.51	39	*2.00	263
22,	5.10	3115	6.80	4440	2.50	675	3.10	1250	2.30	505	3.75	1990	1.56	51	1.61	64	1.46	30	1.36	15	1.51	39	*1.90	191
23,	3.70	1930	4.65	2835	2.45	630	3.10	1250	2.20	420	3.15	1305	1.56	51	1.56	51	1.41	22	1.46	30	1.51	39	1.86	167
24,	3.30	1470	3.55	1760	2.45	630	2.90	1040	2.35	545	2.90	1040	1.56	51	1.56	51	1.41	22	1.46	30	1.51	39	1.86	167
25,	3.05	1195	3.15	1305	2.35	545	6.05	3675	2.05	301	2.85	990	1.56	51	1.56	51	1.41	22	1.46	30	1.66	80	1.96	234
26,	2.95	1090	3.15	1305	2.35	545	4.45	2690	2.80	945	2.75	900	1.56	51	1.51	39	1.41	22	1.46	30	1.66	80	1.96	234
27,	4.00	2285	3.60	1815	2.35	545	3.70	1930	2.65	810	2.70	855	1.56	51	1.51	39	1.41	22	1.46	30	1.66	80	2.00	263
28,	3.25	1415	6.35	3922	2.25	460	3.55	1760	2.55	720	2.60	765	1.56	51	1.46	30	1.41	22	1.46	30	1.66	80	1.95	226
29,	3.05	1195	------	------	2.25	460	3.45	1645	2.55	720	2.45	630	1.51	39	1.46	30	1.41	22	1.46	30	1.66	80	2.35	545
30,	2.90	1040	------	------	2.15	380	3.10	1250	2.45	630	2.25	460	1.66	80	1.46	30	1.36	15	1.46	30	1.66	80	5.55	3350
31,	2.85	990	------	------	2.15	380	------	------	2.50	675	------	------	1.56	51	1.46	30	------	------	1.46	30	------	------	3.45	1645

a Maximum, 10.75 feet=9678 sec. ft.
*Frozen. Interpolated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF CASSELMAN RIVER, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1911.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.05	1195	*4.05	2330	3.00	1140	2.85	990	2.65	810	2.45	630	2.25	460	1.60	61	*4.50	2725	3.25	1415	2.40	590	2.40	590
2,	3.90	2165	3.55	1760	2.95	1090	2.75	900	2.95	1090	2.20	420	2.15	380	1.60	61	3.50	1700	*5.70	3430	2.35	545	2.35	545
3,	*5.45	3300	3.15	1305	2.85	990	2.65	810	2.85	990	2.10	340	2.10	340	1.65	76	2.90	1040	*4.25	2520	2.30	505	2.35	545
4,	3.90	2165	3.05	1195	2.75	900	3.00	1140	2.75	900	2.00	263	2.10	340	1.80	132	2.80	945	*4.40	2650	2.25	460	2.30	505
5,	3.05	1195	2.95	1090	2.70	855	*6.85	4500	2.65	810	1.90	191	2.05	301	2.10	340	2.65	810	3.65	1875	2.25	460	2.30	505
6,	2.80	945	2.85	990	2.90	1040	*8.95	7232	2.55	720	2.30	505	2.05	301	1.90	191	3.10	1250	3.35	1530	2.25	460	2.30	505
7,	2.65	810	2.80	945	2.85	990	*5.70	3430	2.45	630	2.15	380	2.05	301	1.90	191	3.00	1140	*5.90	3570	3.40	1585	2.30	505
8,	2.55	720	2.75	900	2.85	990	*4.35	2608	2.35	545	2.05	301	2.20	420	1.85	160	2.90	1040	*4.45	2690	3.05	1195	2.30	505
9,	2.50	675	2.80	945	2.80	945	*4.15	2428	2.30	505	1.95	226	2.10	340	1.85	160	2.85	990	3.50	1700	2.85	990	2.35	545
10,	2.45	630	2.70	855	2.75	900	*4.00	2280	2.25	460	1.90	191	2.05	301	1.75	112	2.70	855	3.15	1305	2.75	900	2.55	720
11,	2.65	810	2.60	765	2.75	900	3.70	1930	2.15	380	1.90	191	2.05	301	1.80	132	2.75	900	3.35	1530	2.55	720	2.55	720
12,	3.35	1530	2.55	720	2.75	900	3.40	1585	2.10	340	3.20	1360	2.05	301	1.80	132	2.70	855	3.20	1360	2.45	630	2.50	675
13,	*11.70	10970	2.55	720	2.85	990	3.20	1360	2.05	301	2.95	1090	2.00	263	1.80	132	2.75	900	2.85	990	2.55	720	2.50	675
14,	*7.45	5230	3.00	1140	2.95	1090	3.15	1305	2.05	301	2.70	855	2.00	263	1.75	112	2.90	1040	2.75	900	2.55	720	2.55	720
15,	*6.05	3675	3.95	2225	3.20	1360	3.55	1760	2.05	301	2.55	720	2.00	263	1.70	93	*10.90	9880	3.30	1470	2.50	675	3.45	1645
16,	*4.35	2608	3.35	1530	3.10	1250	3.15	1305	2.05	301	2.35	545	1.90	191	1.70	93	*10.20	8930	3.05	1195	2.40	590	*6.10	3710
17,	3.45	1645	3.15	1305	3.05	1195	3.05	1195	2.00	263	2.55	720	1.80	132	1.70	93	*7.60	5420	3.00	1140	2.40	590	*4.60	2800
18,	3.15	1305	2.95	1090	2.95	1090	2.95	1090	2.00	263	*8.95	7232	1.70	93	1.65	76	4.00	2285	*5.30	3215	4.05	2345	3.95	2225
19,	2.95	1090	2.80	945	3.20	1360	2.85	990	1.95	226	*4.35	2608	1.60	61	1.65	76	3.80	2045	*4.20	2475	3.45	1645	3.25	1415
20,	2.75	900	2.70	855	3.95	2225	3.35	1530	1.95	226	3.45	1645	1.60	61	1.55	49	3.30	1470	3.45	1645	3.00	1140	3.05	1195
21,	2.75	900	2.65	810	3.75	1990	3.20	1360	1.95	226	3.00	1140	1.60	61	1.60	61	3.30	1470	3.20	1360	2.85	990	2.95	1090
22,	2.65	810	2.60	765	3.60	1815	3.20	1360	1.95	226	2.75	900	1.60	61	1.55	49	3.20	1360	3.05	1195	2.80	945	3.05	1195
23,	2.55	720	2.60	765	3.50	1700	3.65	1875	1.95	226	2.55	720	1.60	61	1.50	37	2.90	1040	3.35	1530	2.70	855	3.05	1195
24,	2.50	675	2.75	900	3.40	1585	3.25	1415	2.45	630	2.45	630	1.60	61	1.40	20	2.60	765	3.15	1305	2.65	810	3.35	1530
25,	2.40	590	2.85	990	3.35	1530	3.15	1305	2.35	545	2.35	545	1.60	61	1.60	61	2.35	545	2.90	1040	2.65	810	3.45	1645
26,	2.75	900	3.15	1305	3.30	1470	3.05	1195	2.25	460	3.15	1305	1.60	61	1.80	132	2.35	545	2.80	945	2.55	720	3.45	1645
27,	3.85	2105	3.65	1875	3.25	1415	2.95	1090	2.10	340	2.95	1090	1.60	61	2.00	263	2.25	460	2.75	900	2.55	720	*6.70	4320
28,	3.95	2225	3.35	1530	3.15	1305	2.85	990	1.95	226	3.00	1140	1.60	61	2.50	675	3.80	2045	2.55	720	2.50	675	*4.65	2835
29,	*4.50	2725	------	------	3.10	1250	2.75	900	1.95	226	2.65	810	1.60	61	*6.70	4320	*5.75	3465	2.50	675	2.50	675	3.45	1645
30,	*11.75	11038	------	------	3.05	1195	2.65	810	2.45	630	2.40	590	1.60	61	*6.40	3970	3.90	2165	2.45	630	2.50	675	3.25	1415
31,	*5.95	3605	------	------	2.95	1090	------	------	2.25	460	------	------	1.60	61	*8.90	7165	------	------	2.50	675	------	------	*5.35	3242

*Back water from Youghiogheny River.

ESTIMATED MONTHLY DISCHARGE OF CASSELMAN RIVER, AT CONFLUENCE, SOMERSET COUNTY.

(Drainage area 450 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1904.					
October,	61	14	31	0.069	0.080
November,	49	20	31	0.069	0.080
1905.					
January,	--------	340	--------	--------	--------
March,	9205	990	--------	--------	--------
April,	1930	675	952	2.115	2.360
May,	1585	263	633	1.407	1.622
June,	3430	263	912	2.027	2.262
July,	1815	263	687	1.527	1.760
August,	3270	191	754	1.675	1.931
September,	2960	132	549	1.220	1.361
October,	3710	76	654	1.453	1.675
November,	3405	226	586	1.302	1.452
December,	6490	340	1289	2.864	3.301
The year,	--------	76	--------	--------	--------
1906.					
January,	8525	460	1454	3.231	3.725
February,	855	263	425	0.944	0.983
March,	5545	263	1248	2.773	3.197
April,	4080	675	1926	4.280	4.775
May,	900	132	438	0.973	1.121
June,	2995	132	548	1.218	1.359
July,	765	61	138	0.307	0.354
August,	7030	226	1461	3.247	3.743
September,	380	93	183	0.407	0.454
October,	765	132	282	0.627	0.723
November,	1415	112	391	0.869	0.970
December,	5290	380	1712	3.804	4.385
The year,	8525	61	850	1.890	25.789
1907.					
January,	11650	765	3265	7.255	8.364
February,	3215	675	1009	2.242	2.335
March,	19660	675	3469	7.709	8.888
April,	3040	630	1174	2.609	2.911
May,	6695	855	1626	3.613	4.165
June,	4140	505	1788	3.973	4.432
July,	3030	380	854	1.898	2.188
August,	945	112	312	0.693	0.798
September,	1140	112	306	0.680	0.759
October,	675	93	253	0.562	0.648
November,	3640	191	1200	2.666	2.975
December,	3780	545	1900	4.222	4.867
The year,	19660	93	1430	3.177	43.330
1908.					
January,	4800	460	1258	2.796	3.224
February,	16810	460	1762	3.916	4.224
March,	10425	810	3232	7.182	8.280
April,	5355	590	1620	3.600	4.017
May,	9065	720	2104	4.676	5.391
June,	990	105	347	0.771	0.860
July,	1090	71	231	0.513	0.591
August,	249	25	60	0.133	0.153
September,	34	6	14	0.031	0.034
October,	34	18	23	0.051	0.059
November,	56	12	26	0.058	0.065
December,	990	18	151	0.336	0.387
The year,	16810	6	902	2.005	27.285

ESTIMATED MONTHLY DISCHARGE OF CASSELMAN RIVER, AT CONFLUENCE, SOMERSET COUNTY.

(Drainage area 450 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1909.					
January,	3040	105	628	1.396	1.610
February,	5810	263	1585	3.522	3.667
March,	2975	675	1392	3.093	3.565
April,	4440	810	1751	3.891	4.341
May,	1700	301	624	1.387	1.599
June,	2465	380	855	1.900	2.120
July,	380	71	149	0.331	0.381
August,	1875	18	334	0.742	0.855
September,	179	44	82	0.182	0.203
October,	1700	18	246	0.547	0.631
November,	213	105	153	0.340	0.379
December,	1700	124	393	0.873	1.006
The year,	5810	18	683	1.517	20.357
1910.					
January,	9678	505	2157	4.793	5.526
February,	4440	226	1443	3.207	3.340
March,	4620	380	1306	2.902	3.345
April,	3675	144	702	1.560	1.740
May,	1090	301	660	1.467	1.691
June,	12190	460	1758	3.907	4.359
July,	420	39	207	0.460	0.530
August,	80	30	41	0.091	0.105
September,	271	15	67	0.149	0.166
October,	30	9	20	0.044	0.051
November,	80	22	38	0.084	0.093
December,	3350	80	340	0.756	0.872
The year,	12190	9	728	1.618	21.818
1911.					
January,	11038	590	2253	5.007	5.772
February,	2330	720	1162	2.582	2.689
March,	2225	835	1243	2.762	3.184
April,	7232	810	1756	3.902	4.353
May,	1090	226	470	1.044	1.204
June,	7232	191	976	2.169	2.420
July,	460	61	196	.436	.503
August,	7165	20	620	1.378	1.589
September,	9880	460	2003	4.451	4.966
October,	3570	630	1599	3.553	4.096
November,	2345	460	845	1.878	2.096
December,	4320	505	1387	3.082	3.553
The year,	11038	20	1209	2.687	36.425

LAUREL HILL CREEK.

DESCRIPTION OF BASIN.

Laurel Hill creek, in Somerset and Fayette counties, the principal tributary of the Casselman river, drains an area of approximately 125 square miles. Rising in the southeastern corner of Jefferson township, Somerset county, this stream flows northward a short distance, and then, describing a semicircle, turns southward, through a hilly farming country, almost deforested and underlain with bituminous coal, to its mouth at Confluence, a distance of about 30 miles. There are many tributaries to this stream, none of which, however, drain an area of more than seven or eight square miles, the watershed being an approximate parallelogram seven miles in width and about 17 miles in length. One borough and numerous farming villages are located on this basin. A few private water supplies are obtained from this watershed.

The mean annual precipitation over this watershed is from 40 to 45 inches.

The discharge has been measured since September 15th, 1904, at Confluence, near its mouth.

OHIO BASIN—STATION NO. 31.

LAUREL HILL CREEK AT CONFLUENCE, PA

DESCRIPTION OF STATION.

This station was established by the United States Geological Survey on September 15th, 1904. On April 1st, 1907, this station was taken over by the Water Supply Commission of Pennsylvania, which has been operating it since that date. It is located on a single span, steel highway bridge, near a tannery, one-fourth of a mile from the railroad station at Confluence.

The channel is straight for 25 feet above and 300 feet below the station. The right bank is low and clean, but subject to overflow during high water, while the left bank is high and does not overflow. The bed is composed of rough cobble stones and is permanent. The current is swift. In September, 1908, this creek was practically dry.

Discharge measurements are made from the downstream side of the bridge. The initial point for soundings is centre of bridge pin over left abutment on left side of bridge.

A standard chain gage is fastened to the downstream hand-rail of the bridge. The length of chain from the bottom of weight to the marker is 17.49 feet. The elevation of zero is arbitrary datum. Bench mark No. 1 is a cross on top of bolt in bed plate of bridge at right abutment; elevation 14.16 feet above gage datum. Bench mark No. 2 is a cross on lower chord of bridge under gage box; elevation 14.74 feet above gage datum. The gage is read once daily by Lloyd L. Mountain.

This station is of value chiefly for low water measurements as the discharge values for high gage readings are liable to be considerably in error owing to frequent backwater from the Youghiogheny and Casselman rivers, and the discharge above gage height 4.7 feet has not been published for this reason.

Since the establishment of this station 20 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF LAUREL HILL CREEK, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

(Drainage area 126 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet	Sec.-ft.	
	1904.							
1	July 8,	Hoyt & Hall,	83	156	0.80	2.14	125	
2	Sept. 12,	Murphy,	80	91	0.30	1.78	27	
3	Sept. 27,	Grover,	84	84	0.19	1.75	16	
	1905.							
4	Mar. 11,	Murphy,	100	293	3.18	3.79	933	
5	Mar. 11,	do.	100	262	3.45	3.63	903	
6	Mar. 15,	Grover & Morse,	100	214	2.78	3.05	595	
7	Mar. 16,	do.	100	220	3.04	3.11	665	
8	Mar. 28,	Murphy,	98	196	2.89	2.98	568	
9	April 17,	Horton,	90	167	1.45	2.45	242	
10	April 22,	do.	100	228	3.00	3.21	684	
11	June 6,	Bolster,	87	114	0.52	1.98	59	
12	Nov. 4,	Hanna & Grieve,	90	167	1.02	2.30	171	
	1906.							
13	May 26,	Follansbee,	82	116	0.46	1.96	53	
	1907.							
14	June 10,	Horton,	92	175	1.49	2.52	260	
15	Aug. 15,	Padgett,	85	120	0.60	2.07	72	
	1908.							
16	Feb. 16,	Henshaw,	114	595	3.26	6.73	1946	Backwater.
17	Feb. 17,	do.	102	275	3.49	3.74	960	No backwater.
18	Aug. 21,	Bolster,	73	81	0.21	1.61	16.8	0.5 depth.
	1909.							
19	June 12,	Scheidenhelm,	102	249	2.94	3.40	733	
	1911.							
20	July 13,	Langenheim,	102	329	2.66	4.10	875	Rising stage.

DISCHARGE TABLE FOR LAUREL HILL CREEK, AT CONFLUENCE, SOMERSET COUNTY, FROM SEPT. 16, 1904.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1.40	1	.10	95	.80	425	.50	835	.20	1165
.50	4	.20	130	.90	495	.70	885	.30	1210
.60	8	.30	170	3.00	560	.60	935	.40	1255
.70	16	.40	210	.10	625	.80	985	.50	1295
.80	26	.50	260	.20	680	.90	1030	.60	1335
.90	41	.60	310	.30	735	4.00	1075	.70	1375
2.00	62	.70	365	.40	785	.10	1120		

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LAUREL HILL CREEK, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1904. Day.	SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	-----	-----	1.65	12	1.6	8	1.7	16
2,	-----	-----	1.65	12	1.6	8	1.7	16
3,	-----	-----	1.6	8	1.6	8	1.7	16
4,	-----	-----	1.6	8	1.6	8	1.7	16
5,	-----	-----	1.6	8	1.6	8	1.7	16
6,	-----	-----	1.6	8	1.6	8	1.7	16
7,	-----	-----	1.6	8	1.65	12	1.7	16
8,	-----	-----	1.65	12	1.65	12	1.7	16
9,	-----	-----	1.65	12	1.65	12	1.7	16
10,	-----	-----	1.65	12	1.65	12	1.7	16
11,	-----	-----	1.8	26	1.65	12	a 1.7	16
12,	-----	-----	1.8	26	1.65	12	1.75	21
13,	-----	-----	1.8	26	1.65	12	1.75	21
14,	-----	-----	1.75	21	1.65	12	1.75	21
15,	-----	-----	1.7	16	1.65	12	1.8	26
16,	1.8	26	1.7	16	1.65	12	1.8	26
17,	1.8	26	1.7	16	1.7	16	1.8	26
18,	1.7	16	1.65	12	1.7	16	1.85	33
19	1.65	12	1.6	8	1.7	16	1.85	33
20,	1.65	12	1.6	8	1.7	16	1.85	33
21,	1.7	16	1.6	8	1.7	16	1.85	33
22,	1.7	16	1.6	8	1.7	16	1.85	33
23,	1.65	12	1.6	8	1.7	16	1.9	41
24,	1.65	12	1.6	8	1.7	16	b 3.00	560
25,	1.65	12	1.7	16	1.7	16	3.35	760
26,	1.65	12	1.7	16	1.7	16	2.7	365
27,	1.75	21	1.65	12	1.7	16	3.4	785
28,	1.75	21	1.65	12	1.7	16	3.6	885
29,	1.7	16	1.65	12	1.7	16	3.0	560
30,	1.65	12	1.6	8	1.7	16	2.5	260
31,	-----	-----	1.6	8	-----	-----	2.4	210

a River frozen from Dec. 11 to 23.
b Ice gone out.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LAUREL HILL CREEK, AT CONFLUENCE SOMERSET COUNTY, PENNA.

1905. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.3	170	------	------	2.85	460	2.45	235	2.45	235	2.05	78	2.35	190	2.8	425	2.15	113	1.8	26	2.4	210	3.15	650
2,	2.3	170	------	------	------	------	2.35	190	2.40	210	2.05	78	2.45	235	2.5	260	2.1	95	1.8	26	2.3	170	3.0	560
3,	2.5	260	------	------	------	------	2.3	170	2.35	190	2.0	62	2.3	170	2.35	190	2.1	95	2.1	95	2.3	170	6.85	------
4,	2.45	235	2.25	150	2.85	460	2.3	170	2.35	190	2.0	62	2.25	150	2.4	210	2.1	95	1.95	51	2.3	170	4.05	1095
5,	2.45	235	------	------	------	------	2.35	190	2.45	235	2.0	62	2.2	130	2.3	170	2.25	150	1.85	33	2.4	210	3.3	735
6,	2.4	210	------	------	------	------	2.4	210	2.4	210	1.9	41	2.2	130	2.25	150	2.3	170	1.75	21	2.4	210	2.95	525
7,	2.25	150	------	------	------	------	2.45	235	2.3	170	2.7	365	2.2	130	2.25	150	2.3	170	1.7	16	2.35	190	2.75	395
8,	2.15	113	2.9	495	3.65	910	2.45	235	2.25	150	2.5	260	2.3	170	1.9	41	2.6	310	1.7	16	2.35	190	2.65	337
9,	2.05	78	------	------	4.85	------	2.4	210	2.15	113	2.4	210	2.15	113	1.9	41	2.8	425	1.7	16	2.30	170	2.55	285
10,	2.00	62	------	------	5.20	------	2.45	235	2.15	113	2.3	170	2.3	170	1.85	33	2.9	495	1.65	12	2.25	150	2.45	235
11,	2.05	78	2.85	460	3.85	1010	2.9	495	2.2	130	4.45	1275	2.2	130	2.8	425	4.15	1145	2.3	170	2.2	130	2.45	235
12,	2.25	150	------	------	3.20	680	2.9	495	2.55	285	3.7	935	2.2	130	2.55	285	3.1	625	2.4	210	2.2	130	2.4	210
13,	3.7	935	------	------	3.20	680	2.7	365	2.45	235	3.1	625	2.3	170	2.3	170	2.9	495	2.15	113	2.20	130	2.4	210
14,	3.3	735	------	------	3.15	650	2.6	310	2.95	525	2.75	395	2.2	130	2.3	170	2.55	285	2.05	78	2.2	130	2.35	190
15,	3.0	560	2.9	495	3.05	595	2.5	260	3.0	560	2.5	260	2.15	113	4.0	1075	2.4	210	1.95	51	2.15	113	2.35	190
16,	2.65	337	------	------	3.15	650	2.5	260	2.8	425	2.4	210	2.05	78	4.3	1210	2.3	170	1.9	41	2.25	150	2.3	170
17,	2.6	310	------	------	4.0	1075	2.4	210	2.6	310	2.3	170	2.0	62	3.35	760	2.2	130	1.85	33	2.25	150	2.25	150
18,	2.5	260	2.85	460	4.50	1295	2.4	210	2.5	260	2.2	130	2.0	62	2.9	495	2.15	115	1.8	26	2.2	130	2.25	150
19,	2.35	190	------	------	7.65	------	2.4	210	2.4	210	2.15	113	1.9	41	2.6	310	2.1	95	2.2	130	2.2	130	2.2	130
20,	2.35	190	------	------	6.55	------	2.5	260	2.4	210	2.15	113	2.45	235	2.35	190	2.05	78	4.1	1120	2.15	113	2.15	113
21,	2.3	170	------	------	7.95	------	2.65	337	2.3	170	2.1	95	2.2	130	2.3	170	2.0	62	3.15	650	2.1	95	3.5	835
22,	2.25	150	2.9	495	5.20	------	3.15	650	2.25	150	4.6	1335	2.1	95	2.3	170	1.95	51	2.65	337	2.1	95	3.5	835
23,	2.3	170	------	------	3.75	960	2.8	425	2.2	130	3.8	985	2.0	62	2.2	130	1.9	41	2.5	260	2.05	78	3.2	680
24,	2.3	170	------	------	3.3	735	2.65	337	2.15	113	3.85	1010	2.4	210	2.1	95	1.9	41	2.4	210	2.1	95	2.95	525
25,	2.2	130	2.85	460	3.5	835	2.6	310	2.15	113	3.4	785	2.2	130	2.35	190	1.9	41	2.35	190	2.05	78	2.75	395
26,	2.25	150	------	------	3.2	680	2.5	260	2.1	95	3.2	680	2.15	113	2.2	130	1.85	33	2.65	337	2.05	78	2.65	337
27,	------	------	------	------	3.1	625	2.6	310	2.15	113	2.85	460	2.1	95	2.1	95	1.8	26	2.5	260	2.0	62	2.55	285
28	------	------	------	------	2.95	525	2.9	495	2.15	113	2.6	310	2.05	78	2.05	78	1.8	26	2.45	235	2.5	260	2.5	260
29,	------	------	------	------	2.7	365	2.65	337	2.1	95	2.45	235	2.3	170	2.0	62	1.8	26	2.35	190	4.75	1395	3.1	625
30,	------	------	------	------	2.6	310	2.55	285	2.15	113	2.35	190	2.4	210	2.3	170	1.8	26	2.35	190	3.90	1030	2.75	395
31,	------	------	------	------	2.5	260	------	------	2.05	78	------	------	3.25	705	2.2	130	------	------	2.3	170	------	------	2.6	310

Note—Creek frozen over January 27 to March 7, inclusive. During this period gage was read to of ice. Thickness of ice. 0.7 feet to 1.0 feet.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LAUREL HILL CREEK, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1906. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.55	285	2.3	170	2.5	260	3.6	885	2.3	170	2.1	95	1.95	51	1.85	33	2.05	78	1.95	51	1.8	26	2.3	170
2,	2.45	235	2.25	150	2.5	260	3.3	735	2.5	260	2.05	78	1.9	41	1.85	33	2.05	78	2.1	95	1.8	26	2.3	170
3,	2.7	365	2.25	150	2.5	260	3.4	785	2.6	310	1.95	51	1.85	33	2.0	62	2.1	95	2.0	62	1.8	26	2.5	260
4,	4.0	1075	2.3	170	2.6	310	3.5	835	2.4	210	1.85	33	1.9	41	2.0	62	2.0	62	1.9	41	1.8	26	2.4	210
5,	3.2	680	2.3	170	2.5	260	3.8	985	2.35	190	1.8	26	1.85	33	1.90	41	1.9	41	2.0	62	1.8	26	2.35	190
6,	2.85	460	2.25	150	2.5	260	4.6	1335	2.3	170	3.2	680	1.8	26	1.8	26	1.9	41	2.1	95	1.75	21	3.9	1030
7,	2.65	337	2.25	150	2.5	260	3.5	835	2.3	170	3.5	835	1.8	26	4.0	1075	1.85	33	2.3	170	1.75	21	3.65	910
8,	2.7	365	2.2	130	2.5	260	3.15	650	2.25	150	3.0	560	1.8	26	3.8	985	1.8	26	2.1	95	1.75	21	2.9	495
9,	2.5	260	2.2	130	2.5	260	3.3	735	2.35	190	2.5	260	1.8	26	4.8	------	1.8	26	1.95	51	1.75	21	2.7	365
10,	2.3	170	2.25	150	2.4	210	3.75	960	2.4	210	2.4	210	1.8	26	5.9	------	2.15	113	1.95	51	1.7	16	5.5	------
11,	2.25	150	2.2	130	2.5	260	3.3	735	2.35	190	2.25	150	1.75	21	3.6	885	2.0	62	1.9	41	1.8	26	5.1	------
12,	2.4	210	2.15	113	2.6	310	3.0	560	2.3	170	2.2	130	1.75	21	2.95	525	1.75	21	1.9	41	1.8	26	3.55	860
13,	2.35	190	2.15	113	2.5	260	2.45	235	2.3	170	2.2	130	1.7	16	2.7	365	1.8	26	1.85	33	1.8	26	3.1	625
14,	2.3	170	2.15	113	2.5	260	2.1	95	2.25	150	2.2	130	1.7	16	2.45	235	1.8	26	1.85	33	1.8	26	3.0	560
15,	2.35	190	2.1	95	2.5	260	3.6	885	2.25	150	2.15	113	1.75	21	2.35	190	2.0	62	1.8	26	1.8	26	2.9	495
16,	2.45	235	2.1	95	2.45	235	2.9	495	2.2	130	2.1	95	1.75	21	2.25	150	1.85	33	1.8	26	1.9	41	2.85	460
17,	2.55	285	2.1	95	2.45	235	2.75	395	2.2	130	2.05	78	1.7	16	2.25	150	1.75	21	1.8	26	2.0	62	3.55	860
18,	2.9	495	2.05	78	2.4	210	2.65	337	2.2	130	2.00	62	1.9	41	2.4	210	1.7	16	1.8	26	3.0	560	3.2	680
19,	3.05	595	2.05	78	2.4	210	2.6	310	2.15	113	2.00	62	2.0	62	3.45	810	1.7	16	1.8	26	3.4	785	2.8	425
20,	2.75	395	2.05	78	2.35	190	2.5	260	2.1	95	2.00	62	1.85	33	3.3	735	1.65	12	1.95	51	2.95	525	2.8	425
21,	2.9	495	2.3	170	2.35	190	2.6	310	2.05	78	2.1	95	1.7	16	3.25	705	1.8	26	2.1	95	2.75	395	2.7	365
22,	2.9	495	2.75	395	2.4	210	2.65	337	2.0	62	2.1	95	1.9	41	2.95	525	1.75	21	1.9	41	2.6	310	2.6	310
23,	7.0	------	2.6	310	2.35	190	2.8	425	2.0	62	2.3	170	2.7	365	2.75	395	1.75	21	1.85	33	2.35	190	2.55	285
24,	3.75	960	2.5	260	2.3	170	2.75	395	1.95	51	2.25	150	2.35	190	2.6	310	1.7	16	1.85	33	2.3	170	2.5	260
25,	3.15	650	2.45	235	2.3	170	2.7	365	1.95	51	2.1	95	2.1	95	2.5	260	1.75	21	1.8	26	2.3	170	2.45	235
26,	2.85	460	2.4	210	2.45	235	2.7	365	1.95	51	2.0	62	2.0	62	2.4	210	1.75	21	1.75	21	2.25	150	2.45	235
27,	2.7	365	2.35	190	3.6	885	2.6	310	2.05	78	2.05	78	1.95	51	2.3	170	1.75	21	1.75	21	2.2	130	2.55	285
28,	2.6	310	2.3	170	5.0	------	2.5	260	2.7	365	2.0	62	1.9	41	2.25	150	1.8	26	1.85	33	2.2	130	3.1	625
29,	2.5	260	------	------	3.8	985	2.4	210	2.35	190	2.0	62	1.9	41	2.2	130	1.75	21	1.85	33	2.15	113	3.05	595
30,	2.45	235	------	------	4.7	1375	2.4	210	2.25	150	1.95	51	2.0	62	2.15	113	1.8	26	1.85	33	2.1	95	3.45	810
31,	2.4	210	------	------	5.4	------	------	------	2.15	113	------	------	1.9	41	2.1	95	------	------	1.80	26	------	------	5.6	------

Note—Discharge probably unaffected by ice conditions during 1906.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LAUREL HILL CREEK, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1907.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	4.8	------	2.35	190	2.7	365	2.4	210	2.7	365	3.25	705	2.2	130	2.3	170	2.0	62	2.05	78	2.1	95	2.5	260
2,	3.55	860	2.55	285	3.2	680	2.4	210	2.6	310	4.0	1075	2.5	260	2.2	130	2.0	62	1.95	51	2.05	78	2.45	235
3,	3.2	680	3.35	760	3.0	560	2.3	170	2.65	337	3.25	705	2.25	150	2.1	95	2.3	170	1.9	41	4.25	1185	2.3	170
4,	3.2	680	2.5	260	2.75	395	2.25	150	2.8	425	2.6	310	2.15	113	2.05	78	2.4	210	2.05	78	4.3	1210	2.2	130
5,	3.0	560	2.25	150	2.5	260	2.2	130	2.5	260	3.0	560	2.1	95	2.0	62	2.25	150	2.0	62	3.5	835	2.25	150
6,	2.8	425	2.25	150	2.35	190	2.2	130	2.5	260	2.5	260	2.7	95	2.55	285	2.2	130	2.15	113	3.05	595	2.15	113
7,	2.8	425	2.2	130	2.25	150	2.25	150	2.85	460	2.5	260	2.05	78	2.25	150	2.15	113	2.05	78	4.0	1075	2.05	78
8,	3.3	735	2.25	150	2.2	130	2.35	190	2.9	495	2.7	365	2.05	78	2.4	210	2.1	95	2.0	62	5.1	------	2.35	190
9,	3.9	1030	2.3	170	2.3	170	2.4	210	5.0	------	2.55	285	2.0	62	2.35	190	2.1	95	2.6	310	3.1	625	2.5	260
10,	3.2	680	2.4	210	2.35	190	2.6	310	3.4	785	2.35	190	1.95	51	2.3	170	2.05	78	2.35	190	3.0	560	4.75	1395
11,	3.0	560	2.35	190	2.65	337	2.7	365	3.1	625	4.4	1255	2.6	310	2.25	150	2.6	310	2.2	130	2.8	425	4.7	1375
12,	9.0	------	2.3	170	2.7	365	2.9	495	2.85	460	3.8	985	3.85	1010	2.35	190	2.55	285	2.1	95	2.65	337	4.5	1295
13,	4.0	1075	2.25	150	14.4	------	2.7	3 5	2.75	395	3.8	985	3.0	560	2.2	130	2.25	150	2.2	130	2.55	285	4.15	1145
14,	8.8	------	2.35	190	17.0	------	2.7	365	2.65	337	4.8	1415	2.6	310	2.1	95	2.2	130	2.25	150	2.5	260	3.95	1050
15,	5.75	------	2.5	260	6.7	------	2.6	310	2.45	235	3.85	1010	2.4	210	2.05	78	2.15	113	2.15	113	2.45	235	3.7	935
16,	3.95	1050	2.5	260	5.2	------	3.0	560	2.5	260	3.1	625	2.35	190	2.05	78	2.1	95	2.1	95	2.35	190	2.95	525
17,	3.8	985	2.45	235	4.25	1185	3.05	595	2.5	260	2.8	425	4.05	1095	2.0	62	2.05	78	2.05	78	2.3	170	2.7	365
18,	4.9	------	2.4	210	3.85	1010	2.9	495	2.5	260	2.65	337	4.2	1165	1.95	51	2.1	95	2.1	95	2.4	210	2.5	260
19,	9.6	------	2.6	310	12.35	------	2.9	495	2.65	337	2.55	285	3.4	785	1.9	41	2.2	130	2.05	78	2.5	260	2.3	170
20,	6.3	------	2.95	525	7.70	------	2.85	460	3.15	650	2.45	235	2.9	495	1.9	41	2.15	113	2.05	78	2.45	235	2.2	130
21,	3.8	985	2.8	425	4.25	118	2.8	425	2.7	365	2.35	190	2.7	365	1.9	41	2.05	78	2.0	62	2.4	210	2.25	150
22,	3.3	735	2.7	365	3.45	81	2.75	395	2.65	337	2.3	170	2.5	260	1.85	33	2.2	130	2.0	62	2.5	260	2.4	210
23,	2.9	495	2.6	310	3.2	68	2.8	425	2.6	310	2.3	170	2.4	210	2.15	113	2.1	95	2.0	62	2.45	235	4.85	1435
24,	2.8	425	2.5	260	2.95	52	3.9	1030	2.55	285	2.3	170	2.4	210	3.6	885	2.1	95	1.95	51	2.45	235	4.75	1395
25,	3.0	560	2.5	260	2.7	36	3.4	785	2.5	260	2.3	170	2.3	170	2.9	495	2.0	62	1.9	41	2.5	260	3.8	985
26,	2.8	425	2.5	260	2.65	337	3.05	595	2.7	365	2.25	150	3.2	680	2.7	365	2.0	62	1.9	41	2.5	260	3.1	625
27,	2.6	310	2.5	260	2.65	337	2.95	525	3.45	810	2.2	130	2.8	425	2.5	260	1.9	41	1.95	51	2.55	285	2.95	525
28,	2.5	260	2.5	260	2.7	365	2.9	495	3.3	735	2.1	95	2.45	235	2.3	170	1.8	26	2.85	460	2.75	395	3.35	760
29,	2.45	235	------	------	2.6	310	2.8	425	3.2	680	2.15	113	2.3	170	2.2	130	1.75	21	2.45	235	2.65	337	3.45	810
30,	2.4	210	------	------	2.5	260	2.75	395	3.0	560	2.2	130	2.25	150	2.1	95	2.1	95	2.2	130	2.55	285	3.25	705
31,	2.4	210	------	------	2.45	235	------	------	3.0	560	------	------	2.2	130	2.0	62	------	------	2.25	150	------	------	3.0	560

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LAUREL HILL CREEK, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1908.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.85	460	2.65	337	2.55	285	3.25	705	2.8	425	2.5	260	1.85	33	1.75	21	1.5	4	1.6	8	1.45	2	1.5	4
2,	2.75	395	2.55	285	5.1	------	3.45	810	2.7	365	2.4	210	1.85	33	1.7	16	1.5	4	1.6	8	1.45	2	1.5	4
3,	2.6	310	2.5	260	4.35	1235	3.2	680	2.65	337	2.3	170	1.85	33	1.65	12	1.45	2	1.6	8	1.45	2	1.5	4
4,	2.55	285	2.45	235	3.6	885	3.0	560	2.95	525	2.25	150	1.8	26	1.6	8	1.45	2	1.6	8	1.45	2	1.5	4
5,	2.5	260	2.4	210	3.5	835	2.85	460	4.1	1120	2.2	130	1.8	26	1.6	8	1.4	1	1.6	8	1.45	2	1.5	4
6,	2.45	235	2.45	235	5.1	------	2.85	460	3.7	935	2.2	130	1.8	26	1.6	8	1.4	1	1.55	6	1.45	2	1.5	4
7,	2.45	235	2.5	260	8.15	------	2.75	395	7.65	------	2.15	113	1.8	26	1.75	21	1.4	1	1.55	6	1.45	2	1.6	8
8,	2.45	235	2.35	190	3.85	1010	4.15	1145	4.75	1395	2.1	95	1.8	26	1.7	16	1.4	1	1.5	4	1.45	2	1.65	12
9,	2.4	210	2.35	190	5.5	------	3.95	1050	4.6	1335	2.1	95	1.8	26	1.7	16	1.4	1	1.45	2	1.45	2	1.55	6
10,	2.4	210	2.4	210	3.85	1010	3.35	760	3.2	680	2.05	78	1.75	21	1.65	12	1.35	0	1.40	1	1.45	2	1.6	8
11,	2.35	190	2.35	190	3.4	785	5.5	------	2.6	310	2.0	62	1.75	21	1.6	8	1.35	0	1.4	1	1.5	4	1.65	12
12,	4.5	1295	2.7	365	3.6	885	3.65	910	2.6	310	2.0	62	1.75	21	1.6	8	1.35	0	1.4	1	1.5	4	1.75	21
13,	3.45	810	3.3	735	3.85	1010	3.2	680	2.65	337	1.95	51	1.75	21	1.6	8	1.35	0	1.4	1	1.5	4	1.75	21
14,	3.15	650	3.8	985	4.4	1255	2.9	495	2.55	285	1.9	41	1.75	21	1.55	6	1.35	0	1.4	1	1.5	4	1.85	33
15,	2.8	425	12.2	------	4.35	1235	2.95	525	2.8	425	2.15	113	1.9	41	1.55	6	1.35	0	1.4	1	1.5	4	1.85	33
16,	2.65	337	5.5	------	4.05	1095	2.9	495	2.6	310	2.1	95	1.85	33	1.55	6	1.35	0	1.4	1	1.5	4	1.9	41
17,	2.5	260	3.7	935	3.55	860	2.85	460	2.65	337	2.05	78	1.8	26	1.55	6	1.35	0	1.4	1	1.5	4	2.1	95
18,	2.45	235	3.45	810	6.15	------	2.8	425	2.8	425	2.0	62	1.75	21	2.0	62	1.3	0	1.4	1	1.55	6	3.1	625
19,	2.4	210	3.1	625	9.05	------	3.5	835	3.3	735	1.95	51	1.75	21	2.0	62	1.3	0	1.4	1	1.55	6	2.7	365
20,	2.35	190	2.9	495	4.50	1295	3.1	625	3.6	885	1.9	41	1.75	21	1.9	41	1.3	0	1.4	1	1.6	8	2.2	130
21,	2.5	260	2.8	425	3.5	835	3.0	560	3.35	760	2.1	95	1.7	16	1.85	33	1.3	0	1.4	1	1.6	8	2.05	78
22,	2.95	525	2.6	310	3.2	680	2.9	495	3.7	935	2.05	78	2.4	210	1.8	26	1.3	0	1.4	1	1.6	8	2.0	62
23	2.9	495	2.6	310	3.0	560	2.8	425	3.0	560	2.0	62	2.1	95	1.8	26	1.3	0	1.4	1	1.55	6	1.95	51
24,	2.6	310	2.55	285	3.0	560	2.7	365	2.75	395	2.4	210	3.1	625	1.8	26	1.3	0	1.4	1	1.55	6	1.95	51
25,	2.55	285	2.5	260	2.85	460	2.6	310	2.6	310	2.3	170	3.05	595	1.75	21	1.3	0	1.45	2	1.55	6	1.9	41
26,	2.55	285	2.45	235	2.85	460	2.5	260	2.55	285	2.1	95	2.8	425	1.7	16	1.3	0	1.45	2	1.55	6	1.9	41
27,	3.15	650	2.4	210	2.75	395	2.45	235	2.5	260	2.0	62	2.6	310	1.7	16	1.3	0	1.45	2	1.55	6	1.9	41
28,	3.00	560	2.4	210	2.75	395	2.4	210	2.4	210	1.9	41	2.4	210	1.65	12	1.5	4	1.45	2	1.55	6	2.0	62
29,	2.6	310	2.35	190	3.9	1030	2.4	210	2.4	210	1.9	41	2.2	130	1.6	8	1.5	4	1.45	2	1.55	6	1.95	51
30,	2.35	190	------	------	3.3	735	2.45	235	2.8	425	1.85	33	2.0	62	1.55	6	1.6	8	1.45	2	1.50	4	1.85	33
31,	2.55	285	------	------	3.6	885	------	------	2.6	310	------	------	1.85	33	1.5	4	------	------	1.45	2	------	------	1.95	51

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LAUREL HILL CREEK, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1909.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.95	51	2.30	170	2.90	495	2.7	365	3.3	735	2.2	130	2.1	95	1.65	12	1.85	33	1.55	6	1.9	41	1.8	26
2,	1.95	51	2.40	210	3.60	885	2.7	365	3.1	625	2.25	150	2.05	78	1.6	8	1.8	26	1.55	6	1.85	33	1.8	26
3,	2.10	95	2.30	170	4.40	1255	2.75	395	3.0	560	2.1	95	2.0	62	1.6	8	1.75	21	1.5	4	1.85	33	1.8	26
4,	2.10	95	2.50	260	4.00	1075	2.95	525	3.1	625	2.2	130	1.95	51	1.6	8	1.75	21	1.5	4	1.85	33	1.75	21
5,	2.00	62	2.80	425	3.65	910	2.9	495	2.9	495	2.75	395	1.9	41	1.6	8	2.0	62	1.5	4	1.8	26	1.75	21
6,	2.50	260	3.10	625	3.30	735	2.8	425	2.7	365	3.4	785	1.85	33	1.6	8	1.8	26	1.5	4	1.8	26	1.75	21
7,	2.30	170	2.80	425	3.50	835	2.9	495	2.6	310	2.8	425	1.85	33	1.6	8	1.7	16	1.5	4	1.8	26	1.9	41
8,	2.10	95	2.65	337	3.80	985	2.8	425	2.5	260	2.7	365	1.80	26	1.6	8	1.7	16	1.5	4	1.8	26	2.25	150
9,	2.30	170	2.40	210	3.7	935	2.7	365	2.5	260	2.6	310	1.80	26	1.6	8	1.7	16	1.5	4	1.85	33	2.2	130
10,	2.20	130	2.60	310	3.75	960	2.6	310	2.5	260	5.85	------	1.7	16	1.55	6	1.7	16	1.5	4	1.85	33	2.1	95
11,	2.20	130	3.80	985	3.15	650	2.55	285	2.5	260	4.0	1075	1.7	16	1.55	6	1.7	16	1.75	21	1.85	33	2.05	78
12,	2.20	130	3.65	910	2.9	495	2.55	285	2.4	210	3.4	785	1.7	16	1.55	6	1.75	21	2.15	113	1.85	33	2.05	78
13,	2.15	113	3.55	860	2.8	425	2.65	337	2.35	190	2.9	495	1.7	16	1.55	6	1.75	21	1.9	41	1.8	26	2.8	425
14,	2.10	95	3.15	650	2.7	365	4.30	1210	2.3	170	2.9	495	1.65	12	1.55	6	1.7	16	1.8	26	1.9	41	4.0	1075
15,	3.50	835	3.15	650	2.55	285	3.50	835	2.25	150	2.75	395	1.65	12	1.75	21	1.7	16	1.8	26	1.9	41	2.8	425
16,	3.05	595	4.50	1295	2.5	260	3.1	625	2.2	130	2.6	310	1.65	12	3.7	935	1.7	16	1.8	26	1.85	33	2.6	310
17,	2.65	337	3.50	835	2.4	210	2.85	460	2.15	113	2.5	260	1.65	12	2.9	495	1.65	12	1.75	21	1.85	33	2.4	210
18,	2.55	285	3.05	595	2.4	210	2.7	365	2.05	78	2.4	210	1.65	12	2.7	365	1.65	12	1.7	16	1.85	33	2.3	170
19,	2.25	150	2.95	525	2.5	260	2.7	365	2.05	78	2.4	210	1.65	12	2.45	235	1.6	8	1.85	33	1.8	26	2.2	130
20,	2.50	260	3.05	595	2.85	460	3.7	935	2.05	78	2.35	190	1.65	12	2.35	190	1.6	8	1.85	33	1.8	26	2.1	95
21	2.45	235	2.85	460	2.65	337	4.1	1120	2.15	113	2.35	190	1.60	8	2.5	260	1.6	8	1.85	33	1.8	26	2.0	62
22,	2.60	310	2.75	395	2.6	310	4.85	------	2.15	113	2.35	190	1.60	8	2.25	150	1.6	8	1.9	41	1.8	26	1.95	51
23,	3.45	810	3.30	735	2.5	260	4.05	1095	2.1	95	2.3	170	1.60	8	2.15	113	1.6	8	2.25	150	1.8	26	1.9	41
24,	3.80	985	6.10	------	2.5	260	3.55	860	2.05	78	2.3	170	1.75	21	2.1	95	1.75	21	2.25	150	1.8	26	1.9	41
25,	3.20	680	4.10	1120	2.7	365	3.1	625	2.0	62	2.3	170	1.75	21	2.0	62	1.75	21	2.4	210	1.85	33	2.1	95
26,	2.80	425	3.35	760	2.75	395	3.05	595	1.95	51	2.25	150	1.7	16	1.9	41	1.75	21	2.1	95	1.85	33	2.2	130
27,	2.65	337	3.30	735	2.9	495	2.8	425	2.3	170	2.35	190	1.7	16	1.9	41	1.7	16	2.1	9	1.85	33	2.2	130
28,	2.60	310	3.20	680	3.0	560	2.7	365	2.45	235	2.3	170	1.7	16	1.85	33	1.65	12	2.0	6	1.85	33	2.2	130
29,	2.50	260	------	------	2.95	525	2.75	395	2.2	130	2.25	150	1.65	12	1.95	51	1.65	12	2.0	6	1.8	26	2.2	130
30,	2.30	170	------	------	2.9	495	3.1	625	2.05	78	2.15	113	1.65	12	1.95	51	1.6	8	1.9	5	1.8	26	2.2	130
31,	2.20	130	------	------	2.8	425	------	------	2.1	95	------	------	1.65	12	1.9	41	------	------	1.9	4	------	------	2.2	130

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LAUREL HILL CREEK, AT CONFLUENCE, SOMERSET COUNTY. PENNA.

1910.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	2.40	210	2.50	260	5.46	......	2.11	99	2.51	265	2.96	534	2.21	134	1.56	6	1.76	22	1.41	1	1.51	4	1.66	13
2,	4.15	1145	2.45	235	4.86	......	2.06	82	2.46	240	3.56	865	2.16	116	1.56	6	1.76	22	1.41	1	1.51	4	1.66	13
3,	8.00	......	2.65	337	4.41	1259	2.01	65	2.41	215	3.26	713	2.11	98	1.51	4	1.76	22	1.41	1	1.51	4	1.66	13
4,	4.30	1230	2.55	285	4.11	1125	1.96	54	2.36	194	2.96	534	2.06	82	1.51	4	2.06	82	1.41	1	1.46	3	1.66	13
5,	3.35	700	2.45	235	4.11	1125	2.11	99	2.31	174	3.21	685	2.01	65	1.51	4	2.06	82	1.41	1	1.46	3	1.66	13
6,	4.30	1210	2.35	190	4.16	1147	2.06	82	2.31	174	3.61	890	2.01	65	1.46	3	1.91	43	1.41	1	1.41	1	1.76	22
7,	4.40	1255	2.30	170	3.66	915	2.01	65	2.26	154	3.16	658	1.96	54	1.46	3	1.86	35	1.41	1	1.41	1	1.76	22
8,	3.50	835	2.30	170	3.41	790	1.96	54	2.26	154	2.91	502	1.96	54	1.46	3	1.81	28	1.51	4	1.41	1	1.76	22
9,	3.15	650	2.45	235	3.16	658	2.01	65	2.41	215	2.91	502	2.06	82	1.46	3	1.76	22	1.51	4	1.41	1	1.76	22
10,	2.85	460	3.00	560	2.91	502	2.01	65	2.51	265	3.46	815	2.06	82	1.46	3	1.71	17	1.46	3	1.41	1	*	......
11	2.65	337	2.80	425	2.76	401	2.01	65	3.06	599	3.66	915	2.01	65	1.46	3	1.66	13	1.46	3	1.41	1	......	......
12,	2.55	285	2.60	310	2.71	371	1.96	54	3.06	599	3.26	713	1.96	54	1.46	3	1.66	13	1.46	3	1.41	1	......	......
13,	2.45	235	2.50	260	2.71	371	1.96	54	2.96	534	2.96	534	1.96	54	1.46	3	1.61	9	1.46	3	1.41	1	......	......
14,	2.40	210	2.45	235	2.66	343	1.91	43	3.06	599	2.76	401	1.96	54	1.46	3	1.61	9	1.46	3	1.41	1	......	......
15,	2.35	190	2.45	235	2.61	315	1.91	43	2.86	467	2.61	315	1.91	43	1.51	4	1.61	9	1.41	1	1.41	1	......	......
16	2.35	190	3.80	985	2.56	290	1.91	43	2.71	371	2.46	240	1.91	43	1.51	4	1.56	6	1.41	1	1.41	1	......	......
17,	2.30	170	3.80	985	2.46	240	1.91	43	2.56	290	2.66	343	2.31	174	1.46	3	1.56	6	1.41	1	1.41	1	......	......
18,	a8.05	......	3.40	785	2.36	194	1.86	35	2.46	240	2.46	240	2.16	116	1.46	3	1.56	6	1.41	1	1.41	1	......	......
19,	5.20	......	3.15	650	2.31	174	1.86	35	2.56	290	9.81	......	2.06	82	1.61	9	1.56	6	1.41	1	1.56	6	......	......
20,	3.55	860	2.90	495	2.61	315	1.86	35	2.56	290	3.96	1057	1.96	54	1.56	6	1.51	4	1.41	1	1.56	6	......	......
21,	4.70	1375	3.20	680	2.51	265	1.96	54	2.51	265	3.16	658	1.91	43	1.56	6	1.51	4	1.41	1	1.56	6	......	......
22,	3.85	1010	4.55	1315	2.46	240	2.66	343	2.46	240	2.86	467	1.86	35	1.56	6	1.51	4	1.41	1	1.56	6	......	......
23,	3.35	700	3.45	810	2.41	215	2.96	534	2.46	240	2.66	343	1.86	35	1.56	6	1.51	4	1.51	4	1.56	6	1.86	35
24,	3.00	560	3.16	658	2.41	215	2.86	467	2.46	240	2.51	265	1.81	28	1.51	4	1.51	4	1.51	4	1.56	6	1.86	35
25,	2.85	460	2.91	502	2.36	194	4.06	1102	2.46	240	2.36	194	1.76	22	1.51	4	1.46	3	1.51	4	1.66	13	1.86	35
26,	2.75	395	2.86	467	2.36	194	3.51	840	2.41	215	2.36	194	1.66	13	1.51	4	1.46	3	1.51	4	1.66	13	1.86	35
27,	3.05	595	3.06	599	2.41	215	3.11	630	2.31	174	2.31	174	1.61	9	1.51	4	1.46	3	1.51	4	1.66	13	1.86	35
28,	2.80	425	4.56	1319	2.36	194	2.96	534	2.31	174	2.51	265	1.56	6	1.46	3	1.46	3	1.51	4	1.66	13	1.86	35
29,	2.70	365	......	......	2.26	154	2.76	401	2.31	174	2.36	194	1.56	6	1.46	3	1.46	3	1.51	4	1.66	13	1.96	54
30,	2.60	310	......	......	2.21	134	2.66	343	2.31	174	2.26	154	1.66	13	1.46	3	1.41	1	1.51	4	1.66	13	4.36	1237
31	2.50	260	......	......	2.16	116	......	......	2.56	290	......	......	1.56	6	1.46	3	..		1.51	4	......	......	3.36	765

a Maximum, 8.36 feet.
*Frozen.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF LAUREL HILL CREEK, AT CONFLUENCE, SOMERSET COUNTY, PENNA.

1911. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	3.06	599	3.36	765	3.06	599	2.71	371	2.58	300	2.58	300	2.23	142	1.70	16	3.85	1010	2.80	425	2.20	130	2.45	235
2,	3.26	713	3.01	566	3.01	566	2.66	343	2.88	481	2.28	162	2.08	88	1.70	16	2.80	425	4.00	1075	2.15	113	2.40	210
3,	4.26	1192	2.66	343	2.96	534	2.61	315	2.78	413	2.18	123	2.03	72	1.65	12	2.20	130	3.50	835	2.10	95	2.40	210
4	3.36	765	2.66	343	2.86	467	3.01	566	2.68	354	2.08	88	1.98	58	1.60	8	2.15	113	3.25	705	2.10	95	2.35	190
5,	2.96	534	2.66	343	2.81	432	4.86	------	2.58	300	1.93	47	1.98	58	1.70	16	2.10	95	3.10	625	2.05	78	2.35	190
6,	2.71	371	2.61	315	2.81	432	6.56	------	2.48	250	2.03	72	1.93	47	1.65	12	2.70	365	2.80	425	2.20	130	2.35	190
7,	2.56	290	2.61	315	2.81	432	3.71	940	2.38	202	1.93	47	1.93	47	1.65	12	2.70	365	4.55	1315	3.05	595	2.35	190
8,	2.46	240	2.56	290	2.81	432	3.76	9 5	2.28	162	1.88	38	2.18	123	1.65	12	2.60	310	3.50	835	2.90	495	2.40	210
9,	2.41	215	2.56	290	2.76	401	3.36	765	2.18	123	1.83	30	1.98	58	1.65	12	2.60	310	3.00	560	2.80	425	2.45	235
10,	2.36	194	2.51	265	2.76	401	3.36	765	2.13	106	1.78	24	1.93	47	1.65	12	2.50	260	3.15	650	2.70	365	2.65	357
11,	2.66	343	2.46	240	2.76	401	3.26	713	2.08	88	1.78	24	1.93	47	1.60	8	2.50	260	3.00	560	2.60	310	2.65	337
12,	3.56	865	2.41	215	2.71	371	3.01	566	2.03	72	3.53	850	1.93	47	1.60	8	2.50	260	2.80	425	2.50	260	2.60	310
13,	9.56	------	2.46	240	2.71	371	2.96	534	2.03	72	2.98	547	a 3.61	890	1.60	8	2.45	235	2.60	310	2.60	310	2.60	310
14,	5.96	------	3.01	566	2.76	401	2.96	534	2.03	72	2.73	383	2.40	210	1.60	8	2.75	395	2.50	260	2.55	285	2.70	365
15	4.56	1319	3.46	815	2.86	467	3.16	658	2.03	72	2.58	300	2.20	130	1.60	8	6.80	------	3.35	760	2.45	235	3.25	705
16,	3.71	940	3.16	658	2.76	401	2.91	502	2.03	72	2.38	202	2.10	95	1.60	8	5.60	------	3.20	680	2.45	235	4.35	1232
17,	3.21	685	2.96	534	2.76	401	2.81	432	2.03	72	2.58	300	1.90	41	1.60	8	3.00	560	3.10	625	2.45	235	3.65	910
18,	3.06	599	2.86	467	2.76	401	2.76	401	1.98	58	6.88	------	1.85	33	1.60	8	2.80	425	4.05	1095	3.85	1010	3.25	705
19,	2.96	534	2.76	401	2.96	534	2.81	432	1.98	58	3.58	875	1.80	26	1.55	6	2.80	425	3.50	835	3.35	760	2.95	525
20	2.76	401	2.71	371	3.36	765	3.26	713	1.98	58	2.98	547	1.70	16	1.55	6	2.80	425	3.20	680	3.00	560	2.90	495
21,	2.76	401	2.66	343	3.26	713	3.11	630	1.93	47	2.78	413	1.70	16	1.50	4	2.90	495	2.95	525	2.90	495	2.95	525
22,	2.66	343	2.61	315	3.16	658	3.16	658	1.93	47	2.58	300	1.70	16	1.50	4	3.40	785	2.80	425	2.85	460	2.95	525
23,	2.56	290	2.61	315	3.06	599	3.21	685	1.88	38	2.43	225	1.70	16	1.45	2	2.95	525	2.70	365	2.75	395	2.90	495
24,	2.51	265	2.61	315	3.01	566	3.01	566	2.28	162	2.33	182	1.70	16	1.40	1	2.60	310	2.60	310	2.70	365	3.00	560
25,	2.41	215	2.66	343	2.96	534	2.91	502	2.18	123	2.28	162	1.70	16	1.50	4	2.50	260	2.55	285	2.65	337	3.00	560
26,	2.81	432	2.76	401	2.91	502	2.81	432	2.08	88	2.78	413	1.70	16	1.60	8	2.40	210	2.50	260	2.60	310	3.00	560
27,	3.06	599	3.16	658	2.86	467	2.71	371	1.98	58	3.18	669	1.70	16	1.75	21	2.30	170	2.40	210	2.60	310	4.40	1255
28,	3.11	630	3.16	658	2.86	467	2.61	315	1.88	38	3.13	642	1.70	16	1.80	26	6.50	------	2.30	170	2.55	285	3.50	835
29,	3.51	840	------	------	2.81	432	2.56	290	1.88	38	2.73	383	1.70	16	4.70	1375	4.45	1275	2.25	150	2.50	260	3.15	650
30,	8.96	------	------	------	2.76	401	2.51	265	2.28	162	2.48	250	1.70	16	4.30	1210	3.30	735	2.20	130	2.50	260	2.95	525
31,	4.96	------	------	------	2.71	371	------	------	2.08	88	------	------	1.70	16	6.00	------	------	------	2.20	130	------	------	4.20	1165

a Maximum 4.30 feet at 12.20 P. M.=1210 sec.-ft.

ESTIMATED MONTHLY DISCHARGE OF LAUREL HILL CREEK, AT CONFLUENCE, SOMERSET COUNTY.

(Drainage area 126 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
*1904.					
October,		8	13	.103	.119
November		8	13	.103	.115
December,		16	158	1.254	1.446
*1905.					
January,		62			
March,		260			
April,		170	297	2.357	2.630
May		78	202	1.603	1.848
June,		41	390	3.095	3.454
July,		41	153	1.214	1.400
August,		33	264	2.095	2.416
September,		26	195	1.548	1.727
October,		12	171	1.357	1.564
November,		62	214	1.698	1.895
December,		113			
*1906.					
January,		150			
February,		78	159	1.262	1.298
March,		170			
April,		95	541	4.294	4.791
May,		51	152	1.206	1.390
June,		26	159	1.262	1.408
July,		16	52	.413	.476
August,		33			
September,		12	37	.294	.328
October,.		21	48	.381	.439
November,		16	140	1.111	1.239
December		170			
The year,		12			
*1907					
January,		210			
February,		130	263	2.087	2.174
March,		130			
April,		130	395	3.135	3.498
May,		235			
June,		95	459	3.643	4.064
July,		51	331	2.627	3.029
August,		33	165	1.309	1.509
September,		21	112	.889	.992
October,		41	111	.881	1.016
November,		78			
December,		78	593	4.706	5.426
The year,		21			
*1908.					
January,		190	374	2.968	3.422
February,		190			
March		285			
April,		210			
May,		210			
June,		33	99	.786	.887
July		16	104	.825	.951
August,		4	18	.143	.165
September,		0	1	.008	.009
October,		1	3	.024	.028
November,		2	4	.032	.035
December,		4	64	.508	.586
The year,		0			

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*All gage heights above 4.7 feet subject to backwater, and therefore no data above this gage height has been published.

ESTIMATED MONTHLY DISCHARGE OF LAUREL HILL CREEK, AT CONFLUENCE, SOMERSET COUNTY.

(Drainage area 126 square miles.)

MONTH.	Discharge in Second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
*1909.					
January,		51	283	2.246	2.589
February,		170			
March,		210	552	4.381	5.051
April,		285			
May,		51	231	1.833	2.113
June,		95			
July,		8	24	.190	.219
August,		6	106	.841	.969
September,		8	18	.143	.159
October,		4	45	.357	.412
November,		26	31	.246	.275
December,		21	149	1.183	1.364
The year,		4			
*1910.					
January,		170			
February,		170	514	4.079	4.248
March,		116			
April,		35	214	1.698	1.895
May,		154	282	2.238	2.580
June,		154			
July,		6	58	.460	.530
August,		3	4	.032	.037
September,		1	16	.127	.142
October,		1	2	.016	.019
November,		1	5	.040	.045
December,		13			
The year,		1			
*1911.					
January,		194			
February,		215	418	3.317	3.454
March,		371	481	3.817	4.401
April		265			
May,		38	138	1.095	1.262
June,		24			
July,		16	79	.627	.723
August,		1			
September,		95			
October,		130	537	4.262	4.915
November,		78	340	2.698	3.010
December,		190	508	4.032	4.648
The year,		1			

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*All gage heights above 4.7 feet subject to backwater, and therefore no data above this gage height has been published.

OHIO BASIN—STATION NO. 32.

YOUGHIOGHENY RIVER AT CONNELLSVILLE, PA.

DESCRIPTION OF STATION.

This station was established by the Water Supply Commission of Pennsylvania on July 22nd, 1908, and is located on a two span, steel, through-truss, highway bridge on the road from Connellsville to New Haven.

The channel above the station is straight for one-half mile, with riffles 600 feet upstream, while the channel below the station is straight for 600 feet with riffles 600 to 800 feet downstream. A railroad bridge crosses the river 500 feet below. The right bank is high and does not overflow, the B. & O. tracks and retaining wall being along this side of the stream. The left bank is high and does not overflow. The bed is composed of rocks, gravel and mud and is permanent.

Discharge measurements are taken from the downstream side of the bridge and by wading during extreme low water at a section 600 feet above the B. & O. pumping station which is about one mile above the bridge on the right bank. The initial point for soundings on the first span is a point on the downstream hand-rail directly above face of concrete retaining wall at B. & O. tracks; on the second span at the bend in the hand-rail over the second pier.

A standard chain gage is bolted to the downstream hand-rail in the New Haven span. The length of the chain from the bottom of the weight to the low water marker is 34.21 feet and to the high water marker 24.21 feet. The elevation of zero of the gage is 860.131 feet, U. S. G. S. levels. Bench mark No. 1 is a chiselled point on projecting stone in retaining wall on New Haven side, below bridge, and is the lowest stone at this point, "B. M." chiselled into stone above, elevation 864.656 feet or 4.525 feet above gage datum. The gage is read twice daily by an employee of F. W. Scheidenhelm, Consulting Engineer, who co-operates in the maintenance of this station.

Since the establishment of this station 15 discharge measurements have been made.

DISCHARGE MEASUREMENTS OF YOUGHIOGHENY RIVER, AT CONNELLSVILLE, FAYETTE COUNTY, PENNA.

(Drainage area 1,320 square miles.)

No.	Date.	Hydrographer.	Width.	Area of section.	Mean velocity.	Gage height.	Discharge.	Remarks.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.	
	1908.							
1.	July 22,	Grant,	243	835	0.77	1.54	640	Surface msmt.
2.	Aug. 22,	Bolster,	244	695	0.36	1.00	252	0.2 & 0.8 depths.
3.	Sept. 25,	Langenheim,	14	9.4	1.67	0.15	15.7	Wading measurement in tail race of mill above bridge.
4.	Nov. 19,	Grant,	89	108	0.75	0.53	80.4	Wading measurement one mile above bridge.
							2.3	Dunbar creek.
							82.7	Total discharge at bridge.
	1909.							
5.	Feb. 17,	Stevenson,	300	2138	3.65	6.40	7817	Surface measurement.
6.	Feb. 26,	do	303	2121	3.87	6.38	8194	Surface measurement.
7.	Mar. 9,	Grant,	288	1774	3.38	5.10	5824	Surface measurement.
8.	April 15,	Scheidenhelm,	296	2138	4.52	6.63	9657	0.6 msmt.
9.	do	do	296	2161	4.43	6.45	9381	Surface msmt.
	1910.							
10.	Mar. 1,	Scheidenhelm,	303	2759	6.13	8.66	16756	Surface msmt.
11.	June 10.	do	306	1703	3.58	5.06	6107	Surface msmt.
12.	June 28,	Gannett,	260	1192	1.74	2.95	2072	0.6 msmt.
	1911.							
13.	July 12,	Langenheim,	242	831	0.70	1.40	582	0.6 depths.
	1912.							
14.	Mar. 15,	Drake,	302	3593	7.20	10.93	25864	Surface measurement.
15.	Mar. 16,	do	302	3809	7.41	11.65	28238	Surface measurement.

DISCHARGE TABLE FOR YOUGHIOGHENY RIVER, AT CONNELLSVILLE, FAYETTE COUNTY, FROM JULY 22, 1908.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.
.10	10	.80	1855	.50	6820	.10	14530	.70	24560
.20	20	.90	2000	.60	7050	.20	14860	.80	25000
.30	35	3.00	2145	.70	7280	.30	15200	.90	25440
.40	55	.10	2305	.80	7520	.40	15550	11.00	25880
.50	75	.20	2470	.90	7780	.50	15920	.10	26320
.60	100	.30	2640	6.00	8040	.60	16290	.20	26760
.70	130	.40	2810	.10	8300	.70	16660	.30	27200
.80	160	.50	2980	.20	8580	.80	17030	.40	27650
.90	200	.60	3150	.30	8860	.90	17400	.50	28100
1.00	250	.70	3325	.40	9150	9.00	17770	.60	28550
.10	300	.80	3500	.50	9450	.10	18140	.70	29000
.20	350	.90	3680	.60	9750	.20	18510	.80	29470
.30	410	4.00	3860	.70	10055	.30	18890	.90	29960
.40	475	.10	4040	.80	10360	.40	19270	12.00	30450
.50	545	.20	4220	.90	10665	.50	19650	.10	30950
.60	615	.30	4400	7.00	10970	.60	20040	.20	31450
.70	690	.40	4580	.10	11280	.70	20440	.30	31950
.80	770	.50	4770	.20	11590	.80	20840	.40	32450
.90	855	.60	4960	.30	11910	.90	21240	.50	32950
2.00	950	.70	5155	.40	12230	10.00	21640	.60	33500
.10	1045	.80	5350	.50	12550	.10	22040	.70	34050
.20	1145	.90	5545	.60	12880	.20	22450	.80	34600
.30	1250	5.00	5740	.70	13210	.30	22860	.90	35150
.40	1360	.10	5950	.80	13540	.40	23270	13.00	35700
.50	1470	.20	6160	.90	13870	.50	23690	.10	36300
.60	1590	.30	6370	8.00	14200	.60	24120	.20	36850
.70	1715	.40	6590						

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YOUGHIOGHENY RIVER AT CONNELLSVILLE, FAYETTE COUNTY, PENNA.

1908.	JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	------	------	*1.20	350	.61	103	.36	47	.48	71	.37	49
2,	------	------	.94	220	.57	92	.38	51	.43	61	.35	45
3,	------	------	.90	200	.57	92	.36	47	.43	61	.22	23
4,	------	------	.93	215	.44	63	.30	35	.43	61	.22	23
5,	------	------	.84	176	.44	63	.30	35	.38	51	.32	39
6,	------	------	.99	245	.47	69	.36	47	.38	51	.45	65
7,	------	------	.99	245	.47	69	.36	47	.33	41	.52	80
8,	------	------	1.14	320	.44	63	.30	35	.38	51	.49	73
9,	------	------	1.01	255	.39	53	.30	35	.38	51	.49	73
10,	------	------	.84	176	.31	37	.26	29	.38	51	.52	80
11,	------	------	.74	142	.31	37	.30	35	.43	61	.59	98
12,	------	------	.74	142	.29	34	.30	35	.46	67	.59	98
13,	------	------	.65	115	.27	30	.26	29	.40	55	.67	121
14,	------	------	.60	100	.29	34	.26	29	.43	61	.77	151
15,	------	------	.55	88	.29	34	.26	29	.46	67	.89	196
16,	------	------	.43	61	.29	34	.26	29	.40	55	.89	196
17,	------	------	.39	53	.21	22	.26	29	.38	51	1.32	423
18,	------	------	1.04	270	.21	22	.28	32	.48	71	2.09	1035
19,	------	------	1.71	698	.17	17	.26	29	.53	82	3.12	2338
20,	------	------	1.54	573	.19	19	.26	29	.50	75	2.52	1494
21,	------	------	.97	235	.17	17	.26	29	.53	82	1.82	787
22,	1.57	594	.84	176	.14	14	.26	29	.53	82	1.52	559
23,	1.42	489	.87	188	.11	11	.28	32	.58	95	1.27	392
24,	1.12	310	.94	220	.14	14	.28	32	.60	100	.97	235
25,	2.98	2116	1.04	270	.14	14	.28	32	.60	100	1.17	335
26,	2.45	1415	.89	196	.11	11	.28	32	.60	100	1.22	362
27,	2.28	1229	.79	157	.11	11	.30	35	.60	100	1.07	285
28,	2.28	1229	.79	157	.31	37	.30	35	.48	71	.87	188
29,	1.82	787	.87	188	.41	57	.28	32	.46	67	.97	235
30,	*1.60	615	.81	164	.41	57	.40	55	.43	61	1.02	260
31,	*1.40	475	.71	133	------	------	.48	71	------	------	1.02	260

*Estimated.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YOUGHIOGHENY RIVER, AT CONNELLSVILLE, FAYETTE COUNTY, PENNA

1909.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
Day.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	0.89	195	1.50	545	4.71	5175	3.60	3150	5.05	5845	2.60	1590	2.01	960	1.29	405	1.50	545	0.78	155	1.57	595	1.23	370
2,	0.89	195	1.86	820	4.72	5195	3.79	3480	5.05	5845	3.55	3065	1.93	885	1.24	375	1.25	380	0.69	125	1.45	510	1.21	355
3,	1.22	360	2.18	1125	5.46	6730	4.11	4060	4.57	4900	3.46	2910	1.84	805	1.04	270	1.14	320	0.69	125	1.49	540	1.09	295
4,	1.57	595	2.18	1125	6.69	10025	4.60	4960	4.53	4825	3.16	2405	1.60	615	0.98	240	1.22	360	0.71	135	1.57	595	1.21	355
5,	1.45	510	2.72	1745	5.51	6845	4.91	5565	4.33	4455	3.27	2590	1.41	480	0.88	190	1.56	585	0.67	120	1.54	575	1.28	400
6,	1.49	540	4.22	4255	4.92	5585	4.60	4960	3.90	3680	6.41	9180	1.32	425	1.14	320	1.52	560	0.60	100	1.33	430	1.21	355
7,	1.67	665	4.05	3950	4.48	4730	4.45	4670	3.56	3080	4.94	5625	1.36	450	0.96	230	1.42	490	0.63	110	1.25	380	1.24	375
8,	1.17	335	3.40	2810	5.20	6160	4.05	3950	3.21	2485	4.27	4345	1.30	410	0.84	175	1.23	370	0.55	85	1.22	360	1.54	575
9,	1.09	295	3.12	2340	5.05	5845	3.71	3340	2.90	2000	4.27	4345	1.22	360	0.75	145	1.10	300	0.59	100	1.37	455	1.43	495
10,	1.55	580	3.62	3185	5.52	6865	3.59	3130	2.93	2045	5.03	5805	1.16	330	0.70	130	1.00	250	0.58	95	1.53	565	1.23	370
11,	1.67	665	4.72	5195	5.02	5780	3.33	2690	2.93	2045	6.57	9660	1.09	295	0.64	110	1.01	255	0.79	155	1.65	650	1.07	285
12,	1.66	660	3.98	3825	4.36	4510	3.51	2995	2.71	1730	5.43	6660	1.08	290	0.58	95	1.82	785	1.33	430	1.57	590	1.51	550
13,	1.57	595	3.84	3570	3.96	3790	3.43	2860	2.43	1395	4.49	4750	1.08	290	0.56	90	1.68	675	2.23	1175	1.47	520	1.75	730
14,	1.49	540	4.58	4920	3.76	3430	7.00	10970	2.27	1220	4.05	3950	1.14	320	0.57	90	1.31	415	1.65	655	1.45	510	4.31	4420
15,	4.21	4240	4.54	4845	3.54	3050	6.60	9750	2.22	1165	3.79	3485	1.14	320	1.00	250	1.16	330	1.33	430	1.35	440	3.60	3150
16,	5.33	6435	5.84	7625	3.21	2485	5.29	6350	2.13	1075	3.77	3445	1.15	325	3.27	2590	1.02	260	1.15	325	1.33	430	2.78	1825
17,	3.69	3305	6.22	8635	3.08	2275	4.53	4830	2.06	1005	3.20	2470	1.09	295	4.66	5075	1.19	345	1.07	285	1.31	415	2.10	1045
18,	3.09	2290	4.98	5700	2.82	1885	4.04	3930	1.99	940	3.61	3170	1.06	280	3.09	2290	1.64	645	1.15	325	1.27	390	1.87	830
19,	2.62	1615	4.30	4400	2.91	2015	3.63	3200	1.89	845	3.35	2725	1.06	280	2.40	1360	1.24	375	1.25	380	1.30	410	1.67	670
20,	2.63	1625	4.38	4545	3.66	3255	4.01	3880	1.83	795	2.91	2015	1.02	260	2.05	995	1.16	330	1.31	415	1.28	400	1.43	495
21,	2.67	1675	4.39	4560	3.56	3080	6.40	9150	1.83	795	2.58	1565	0.95	225	4.19	4200	1.01	255	1.43	495	1.27	390	1.48	530
22,	2.95	2070	4.44	4655	3.22	2505	*8.77	16920	1.96	910	2.44	1405	0.92	210	3.19	2455	0.94	220	1.38	460	1.29	405	1.65	650
23,	4.05	3950	4.46	4695	2.97	2100	7.45	12390	2.09	1035	2.56	1540	1.28	400	2.40	1360	0.86	185	1.53	565	1.30	410	1.57	595
24,	6.05	8170	†9.04	17920	2.79	1840	6.63	9840	1.95	900	2.61	1600	2.00	950	1.97	920	0.82	170	3.99	3840	1.46	515	1.49	540
25,	5.04	5825	8.22	14930	3.04	2210	5.50	6820	1.81	780	2.40	1360	1.56	585	1.70	690	1.04	270	3.90	3680	1.59	610	1.55	580
26,	4.07	3985	6.35	9005	3.66	3255	5.19	6140	1.71	700	2.21	1155	1.32	425	1.48	530	1.06	280	2.95	2075	1.52	560	1.52	560
27,	3.43	2860	5.70	7280	4.14	4110	4.80	5350	1.84	805	3.37	2760	1.14	320	1.44	505	1.04	270	2.68	1690	1.40	475	1.47	525
28,	3.01	2160	5.42	6635	4.32	4435	4.34	4470	2.73	1755	2.75	1785	1.05	275	1.32	425	0.93	215	2.41	1370	1.33	430	1.48	530
29,	2.70	1715	------	------	4.25	4310	4.11	4060	2.74	1770	2.67	1680	1.00	250	1.62	630	0.85	180	2.23	1175	1.29	405	1.49	540
30,	2.65	1650	------	------	4.01	3880	4.21	4240	2.36	1315	2.57	1555	1.02	260	1.70	690	0.80	160	1.93	885	1.27	390	1.49	540
31,	1.93	885	------	------	3.84	3572	------	------	2.21	1155	------	------	1.07	285	1.66	660	------	------	1.71	700	------	------	1.35	440

†Maximum at 5 p. m. 9.36 feet.=19115 second feet.
*Maximum at 8 a. m., 9.04 feet.=17920 second feet.

DAILY MEAN GAGE HEIGHTS AND DISCHARGES OF YOUGHIOGHENY RIVER, AT CONNELLSVILLE, FAYETTE COUNTY, PENNA

1910. Day.	JAN.		FEB.		MAR.		APR.		MAY.		JUNE.		JULY.		AUG.		SEPT.		OCT.		NOV.		DEC.	
	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.	G H	Dis.
1,	1.39	468	3.19	2455	‡8.83	17140	1.81	780	3.17	2420	3.64	3220	2.15	1095	.92	210	.43	60	.37	49	.50	75	1.69	680
2,	2.48	1448	2.75	1785	8.41	15585	1.75	730	2.86	1945	4.82	5390	1.96	910	.94	220	.89	195	.37	49	.54	85	1.13	315
3,	9.68	20360	3.34	2710	7.23	11685	1.73	715	2.68	1690	4.85	5450	1.90	855	.87	190	1.12	310	.26	29	.56	90	1.18	340
4,	9.28	18815	3.38	2775	6.43	9240	1.75	730	2.59	1580	4.34	4470	1.92	875	.76	150	1.96	910	.31	37	.54	85	1.39	470
5,	6.21	8610	3.14	2370	6.03	8120	1.83	795	2.42	1380	4.30	4400	1.89	845	.65	115	1.76	740	.22	23	.58	95	1.39	470
6,	6.75	10205	2.78	1825	5.97	7960	1.86	805	2.26	1210	5.85	7650	1.74	720	.60	100	1.61	620	.20	20	.47	69	1.25	380
7,	8.13	14630	2.36	1315	5.96	7935	1.79	760	2.16	1105	4.90	5545	1.92	875	.61	105	1.39	470	.23	25	.48	71	.97	235
8,	6.12	8355	¶2.50	1470	5.09	5930	1.75	730	2.09	1035	4.14	4110	2.12	1065	.60	100	1.34	435	.25	28	.50	75	1.07	285
9,	4.93	5605	¶2.73	1755	4.33	4450	1.73	715	2.23	1175	3.80	3500	1.90	865	.58	95	1.22	360	.21	22	.35	45	.91	205
10,	4.11	4060	¶3.06	2240	3.81	3520	1.65	650	2.32	1270	4.90	5545	1.80	770	.58	95	1.08	290	.25	28	.38	51	1.11	305
11,	3.32	2675	¶3.29	2625	3.43	2860	1.56	585	2.80	1855	4.96	5660	1.81	780	.61	105	.82	170	.22	23	.46	67	1.15	325
12,	3.43	2860	¶3.25	2555	3.16	2405	1.49	540	4.11	4060	5.04	5825	1.69	680	.64	110	.78	155	.17	17	.42	59	1.17	335
13,	3.29	2625	¶3.15	2385	3.11	2320	1.47	525	3.82	3535	4.50	4770	1.63	640	.62	105	.75	145	.17	17	.44	63	1.15	325
14,	3.21	2485	¶3.00	2145	2.91	2015	1.44	505	3.27	2590	3.99	3840	1.80	770	.57	90	.98	240	.15	15	.46	67	1.11	305
15,	3.65	3235	¶2.75	1585	2.87	1955	1.42	490	2.95	2075	3.66	3255	1.76	740	.51	80	.76	150	.15	15	.48	71	1.18	340
16,	3.13	2355	5.52	6865	2.61	1600	1.49	540	2.72	1745	3.44	2880	1.77	745	.54	85	.73	140	.15	15	.54	85	1.15	325
17,	3.13	2355	¶7.17	11495	2.61	1600	1.75	730	2.49	1460	3.94	3750	1.66	660	.52	80	‖.73	140	.13	13	.58	95	1.16″	330
18,	7.50	12550	6.54	9570	2.53	1505	1.99	940	2.46	1420	3.96	3785	1.58	600	.47	70	‖.69	127	.11	11	.56	90	1.18	340
19,	*10.28	22780	4.90	5545	2.41	1370	2.63	1630	2.32	1270	∫11.66	28850	1.50	545	.56	90	‖.65	115	.13	13	.47	69	1.35	440
20,	6.83	10450	4.31	4420	2.37	1325	3.09	2290	2.28	1230	7.68	13145	1.31	415	.70	130	‖.61	105	.15	15	.28	32	1.68	675
21	6.23	8665	4.78	5310	2.63	1630	3.61	3165	2.55	1530	5.60	7050	1.20	350	.73	140	‖.57	92	.13	13	.29	34	1.73	715
22,	**6.03	8120	†7.77	13440	2.65	1655	4.07	3985	2.52	1495	4.75	5255	1.10	300	.59	95	‖.53	80	.27	30	.55	88	1.69	680
23,	5.83	7600	7.20	11590	2.53	1505	3.76	3430	2.36	1315	4.08	4005	1.06	280	.56	90	‖.49	73	.36	47	.61	103	1.81	780
24,	5.63	7120	5.44	6680	2.43	1395	3.57	3100	2.22	1165	3.64	3220	.97	235	.46	65	‖.45	65	.44	63	.68	124	2.99	2130
25,	5.33	6435	4.57	4905	2.35	1305	§6.17	8495	2.74	1770	3.62	3185	.90	200	.42	60	‖.41	57	.52	80	.90	200	2.95	2070
26,	5.13	6015	4.14	4115	2.23	1175	6.15	8440	3.34	2710	3.00	2145	.86	185	.38	50	.40	55	.52	80	1.14	320	2.71	1730
27,	4.93	5605	4.35	4490	2.13	1075	5.15	6055	2.90	2000	2.66	1665	.82	170	.36	45	.43	60	.50	75	1.41	480	2.43	1395
28,	4.69	5135	7.77	13440	2.03	980	4.44	4655	2.68	1690	2.86	1940	.78	155	.34	45	.46	65	.49	73	1.70	690	2.21	1155
29,	4.30	4400	------	------	1.97	920	3.91	3700	2.46	1425	2.83	1900	.75	145	.32	40	.46	65	.54	85	2.18	1125	3.51	2995
30,	3.73	3375	------	------	1.89	845	3.49	2965	2.42	1380	2.50	1470	.82	170	.50	75	.42	60	.60	100	2.40	1360	7.20	11590
31,	3.60	3150	------	------	1.85	810	------	------	2.56	1540	------	------	.86	185	.40	55	------	------	.60	100	------	------	5.79	7495

*Maximum at 8 a. m., 11.23 feet=26892 sec.-ft.
†Maximum at 5 p. m., 8.27 feet=15100 sec.-ft.
‡Maximum at 8 a. m., 9.01 feet=17805 sec.-ft.
‖Chain broke after a. m. reading Sept. 16th, new chain in place 26th.—Gage heights estimated.
§Maximum at 5 p. m., 7.26 feet=11780 sec.-ft.
∫ Maximum at 8 a. m., 13.09 feet=36300 sec.-ft.
¶Ice gorged from 8th to 15th, just below bridge; broke night of 15th.
**Estimated.
″Frozen.

MISCELLANEOUS DISCHARGE MEASUREMENTS OF PENNSYLVANIA STREAMS.

MISCELLANEOUS DISCHARGE MEASUREMENTS OF PENNSYLVANIA STREAMS.
DELAWARE BASIN.

Stream.	Location.	Date.	Drainage area above point.	Gage height.	Total discharge.	Discharge per square mile of tributary drainage area.	Remarks.
Chester creek,	Glen Riddle, Delaware County,	Oct. 5, 1908,	55	....	57	1.037	From foot bridge 100 feet below tail race of plush mill; creek high as result of storm latter part of September.
Crum creek,	Strathaven Inn, Delaware County,	Oct. 7, 1908,	32	....	13	0.406	Wading measurement under bridge below dam; creek high as result of storm latter part of September.
Darby creek,	Garrettford, Delaware County,	Oct. 7, 1908,	35	....	20	0.571	At Garrett Paper Mill Race; creek high as result of storm the latter part of Sept.
Dyberry creek,	Honesdale, Wayne County,	Sept. 22, 1908,	71	....	4.1	0.058	From bridge at Honesdale; extreme low water; referenced.
East Br. Brandywine creek,	Downingtown, Chester County,	Oct. 8, 1908,	63	....	22	0.349	Wading measurement by integration; referenced; creek high as result of storm the latter part of September.
Equinunk creek,	Halbertville, Wayne County,	Sept. 21, 1908,	56	....	3.1	0.055	Wading measurement 2000 feet above Halbertville bridge; minimum flow.
French creek,	Phoenixville, Chester County,	Oct. 6, 1908,	71	....	24	0.338	Wading measurement by integration; referenced; creek high as result of storm the latter part of September.
Little Bushkill creek,	Bushkill, Pike County,	Sept. 18, 1908,	26	0.03	3.96	0.152	Wading measurement 450 feet above dam at former gaging station; minimum flow.
Little Bushkill creek,	Bushkill, Pike County,	Feb. 27, 1909,	26	1.90	331	12.731	Creek proper and head race. Measurement at former gaging station.
Little Bushkill creek,	Bushkill, Pike County,	April 28, 1909,	26	1.35	162	6.231	Creek proper and head race. Measurement at former gaging station.
Little Bushkill creek,	Bushkill, Pike County,	June 20, 1909,	26	0.40	21	0.808	Wading measurement above dam at former gaging station.

Stream.	Location.	Date.	Drainage area above point.	Gage height.	Total discharge.	Discharge per square mile of tributary drainage area.	Remarks.
Little Bushkill creek,	Bushkill, Pike County,	July 7, 1909,	26	0.18	8.3	0.319	Wading measurement below gage at former gaging station.
Little Bushkill creek,	Bushkill, Pike County,	May 16, 1910,	26	0.80	84	3.231	From highway bridge at former gaging station.
Little Bushkill creek,	Bushkill, Pike County,	Nov. 11, 1910,	26	0.20	7.9	0.304	Wading measurement 30 feet below bridge at former gaging station.
Little Bushkill creek,	Bushkill, Pike County,	Aug. 3, 1911,	26	0.21	9.6	0.369	At former gaging station.
Little Schuylkill river,	Port Clinton, Schuylkill County,	Sept. 22, 1908,	142	....	30	0.211	Wading measurement 200 feet upstream from junction of two rivers; referenced; flow augmented by mine pumpage.
Maiden creek,	East Berkley, Berks County,	Sept. 21, 1908,	215	22.10	80	0.372	Wading measurement below mouth of Willow creek; limestone stream.
Maiden creek,	East Berkley, Berks County,	Dec. 8, 1908,	194	21.00	193	0.995	Wading measurement at wooden bridge above mouth of Willow creek.
Maiden creek,	East Berkley, Berks County,	Feb. 24, 1909,	194	16.15	1993	10.273	Measurement from wooden bridge above mouth of Willow creek.
Maiden creek,	East Berkley, Berks County,	Mar. 24, 1909,	194	20.85	196	0.010	Measurement from wooden bridge above mouth of Willow creek.
Maiden creek,	East Berkley, Berks County,	Mar. 25. 1909,	194	20.30	292	1.505	Measurement from wooden bridge above mouth of Willow creek.
Maiden creek,	East Berkley, Berks County,	Aug. 21, 1909,	215	22.15	58	0.270	Wading measurement below mouth of Willow creek.
Manatawney creek,	Pottstown, Montgomery County,	Sept. 22, 1908,	90	....	32	0.356	Wading measurement ½ mile above highway bridge; referenced; minimum flow; limestone stream.

Middle creek,	**West Hawley, Wayne County,**	**Sept. 22, 1908,**	**77**	....	4.7	**0.061**	**Wading measurement 100 feet below second highway bridge from mouth; referenced; minimum flow.**
Monocacy creek,	Bethlehem, Northampton County,	Sept. 14, 1908,	50	....	29	0.580	From second foot bridge above Main Street bridge; referenced; limestone stream.
Monocacy creek,	Bethlehem, Northampton County,	April 23, 1909,	50	1.17	49	0.980	Wading measurement opposite Illick's Mill; total discharge for tail race and creek proper.
Monocacy creek,	Bethlehem, Northampton County,	May 1, 1909,	50	1.80	151	3.020	From second foot bridge above Main Street bridge.
Monocacy creek,	Bethlehem, Northampton County,	May 15, 1909,	50	1.43	37.4	0.748	Wading measurement opposite Illick's Mill; total discharge for tail race and creek proper.
Pennypack creek,	Walton's Mill, Montgomery Co.,	Sept. 23, 1908,	29	....	15.2	0.524	
Pickering creek,	Phoenixville, Chester County,	Oct. 6, 1908,	38	....	18	0.474	At N. Springfield Water Co.'s pumping station; creek high as result of storm latter part of September.
Ridley creek,	Media, Delaware County,	Oct. 5, 1908,	31	....	28	0.903	Wading measurement at R. R. viaduct; referenced; creek high as result of storm latter part of September.
Schuylkill river,	Port Clinton, Schuylkill County,	Sept. 22, 1908,	195	....	40	0.205	Wading measurement ½ mile above Port Clinton; minimum flow increased by mine pumpage.
Schuylkill river,	Reading, Berks County,	Sept. 21, 1908,	843	....	202	0.240	From highway bridge between Reading and West Reading; flow increased by mine pumpage.
Tulpehocken creek,	Reading, Berks County,	Sept. 21, 1908,	218	....	92	0.422	Wading measurement in tail race of paper mill at mouth; referenced; low flow; limestone stream.
West Br. Brandywine creek,	Coatesville, Chester County,	Oct. 8, 1908,	34	....	15	0.441	Wading measurement above Coatesville; referenced; creek high as result of storm latter part of September.
Willow creek,	East Berkley, Berks County,	Dec. 8, 1908,	21	....	10.7	0.510	Wading measurement above mouth.
Willow creek,	East Berkley, Berks County,	Feb. 24, 1909,	21	....	80	3.810	Measurement from concrete bridge 600 feet above mouth.
Willow creek,	East Berkley, Berks County,	Mar. 24, 1909,	21	....	22	1.048	Measurement from highway bridge one-third mile above mouth; referenced.
Willow creek,	East Berkley, Berks County,	Mar. 25, 1909,	21	....	50	2.381	Measurement from highway bridge one-third mile above mouth; referenced.

Stream.	Location.	Date.	Drainage area above point.	Gage height.	Total discharge.	Discharge per square mile of tributary drainage area.	Remarks.
Bakers Run,	Kittanning Point, Blair County,	Sept. 29, 1904,			0.43		From weir above P. R. R. reservoir.
Bakers Run,	Kittanning Point, Blair County,	Nov. 30, 1904,			0.43		From weir above P. R. R. reservoir.
Bald Eagle creek,	Castanea, Clinton County,	Sept. 9, 1908,	780	0.85	305	0.391	From highway bridge at former gaging station; limestone stream.
Bald Eagle creek,	Castanea, Clinton County,	Oct. 20, 1908,	780	0.98	310	0.397	From highway bridge at former gaging station; limestone stream.
Bald Eagle creek,	Castanea, Clinton County,	Feb. 26, 1909,	780	5.30	4015	5.147	From highway bridge at former gaging station; limestone stream; back-water from river.
Bald Eagle creek,	Castanea, Clinton County,	Feb. 27, 1909,	780	3.90	3230	4.141	From highway bridge at former gaging station; limestone stream; back-water from river.
Bald Eagle creek,	Castanea, Clinton County,	Aug. 12, 1909,	780	0.83	323	0.414	From highway bridge at former gaging station; limestone stream.
Bald Eagle creek,	Castanea, Clinton County,	June 22, 1910,	780	1.51	790	1.013	From highway bridge at former gaging station; limestone stream.
Bald Eagle creek	Castanea, Clinton County,	July 15, 1910,	780	0.95	465	0.596	From highway bridge at former gaging station; limestone stream.
Bald Eagle creek,	Castanea, Clinton County,	July 22, 1911,	780	0.75	371	0.476	From highway bridge at former gaging station; limestone stream.
Bald Eagle creek,	Castanea, Clinton County,	May 22, 1912,	780	2.33	1774	2.274	From highway bridge at former gaging station; limestone stream.
Bear Rock run,	Lilly, Cambria County,	Aug. 16, 1904,	1.6		0.49	0.306	From weir above reservoir No. 2.
Bear Rock run,	Lilly, Cambria County,	Aug. 23, 1904,	1.6		0.41	0.256	From weir above reservoir No. 2.
Bear Rock run,	Lilly, Cambria County,	Aug. 30, 1904,	1.6		0.38	0.238	From weir above reservoir No. 2.
Bear Rock run,	Lilly, Cambria County,	Sept. 7, 1904,	1.6		0.31	0.194	From weir above reservoir No. 2.
Bear Rock run,	Lilly, Cambria County,	Sept. 13, 1904,	1.6		0.21	0.194	From weir above reservoir No. 2.

Bear Rock run,	Lilly, Cambria County,	Sept. 16, 1904,	1.6	....	0.31	0.194	From weir above reservoir No. 2.
Bear Rock run,	Lilly, Cambria County,	Sept. 19, 1904,	1.6	....	0.31	0.194	From weir above reservoir No. 2.
Bear Rock run,	Lilly, Cambria County,	Sept. 22, 1904,	1.6	....	0.31	0.194	From weir above reservoir No. 2.
Bear Rock run,	Lilly, Cambria County,	Sept. 29, 1904,	1.6	....	0.25	0.156	From weir above reservoir No. 2.
Bear Rock run,	Lilly, Cambria County,	Oct. 19, 1904,	1.6	....	0.18	0.112	From weir above reservoir No. 2.
Bear Rock run,	Lilly, Cambria County,	Nov. 21, 1904,	1.6	....	0.18	0.112	From weir above reservoir No. 2.
Bear Rock run,	Lilly, Cambria County,	Nov. 28, 1904,	1.6	....	0.17	0.106	From weir above reservoir No. 2.
Bear Rock run,	Lilly, Cambria County,	Nov. 30, 1904,	1.6	....	0.31	0.194	From weir above reservoir No. 2.
Bear Rock run,	Lilly, Cambria County,	Dec. 2, 1904,	1.6	....	0.22	0.136	From weir above reservoir No. 2.
Bear Rock run,	Lilly, Cambria County,	Dec. 5, 1904.	1.6	....	0.13	0.081	From weir above reservoir No. 2; probably minimum flow.
Bear Rock run,	Lilly, Cambria County,	Dec. 6, 1904,	1.6	....	0.13	0.081	From weir above reservoir No. 2.
Bear Rock run,	Lilly, Cambria County,	Dec. 14, 1904,	1.6	....	0.13	0.081	From weir above reservoir No. 2.
Bear Rock run,	Lilly, Cambria County,	Dec. 23, 1904,	1.6	....	0.22	0.138	From weir above reservoir No. 2.
Beaver creek,	Hummelstown, Dauphin County,	Sept. 12, 1908,	27	....	2.19	0.081	Wading measurement 150 feet below first bridge above mouth; referenced; minimum flow.
Bellman run,	Blossburg, Tioga County,	Sept. 15, 1908,	5.2	....	0.11	0.021	From 3 foot weir.
Bells run,	Bellwood, Blair County,	Aug. 20, 1904,	14	....	7.43	0.531	From weir above Bells Run reservoir.
Bells run,	Bellwood, Blair County,	Aug. 23, 1904,	14	....	5.19	0.371	From weir above Bells Run reservoir.
Bells run,	Bellwood, Blair County,	Aug. 30, 1904,	14	....	4.03	0.298	From weir above Bells Run reservoir.
Bells run,	Bellwood, Blair County,	Sept. 7, 1904,	14	....	3.54	0.253	From weir above Bells Run reservoir.
Bells run,	Bellwood, Blair County,	Sept. 22, 1904,	14	....	2.82	0.201	From weir above Bells Run reservoir.
Bells run,	Bellwood, Blair County,	Sept. 29, 1904,	14	....	2.76	0.197	From weir above Bells Run reservoir.
Bells run,	Bellwood, Blair County,	Oct. 1, 1904,	14	....	2.54	0.181	From weir above Bells Run reservoir.
Bells run,	Bellwood, Blair County,	Oct. 17, 1904,	14	....	2.54	0.181	From weir above Bells Run reservoir.
Bells run,	Bellwood, Blair County,	Nov. 3, 1904,	14	....	2.34	0.167	From weir above Bells Run reservoir.
Bells run,	Bellwood, Blair County,	Nov. 9, 1904,	14	....	2.54	0.181	From weir above Bells Run reservoir.
Bells run,	Bellwood, Blair County,	Nov. 17, 1904,	14	....	2.14	0.153	From weir above Bells Run reservoir.
Bells run,	Bellwood, Blair County,	Nov. 22, 1904,	14	....	2.04	0.146	From weir above Bells Run reservoir.
Bells run,	Bellwood, Blair County,	Nov. 28, 1904,	14	....	1.85	0.132	From weir above Bells Run reservoir.
Bells run,	Bellwood, Blair County,	Nov. 29, 1904.	14	....	1.85	0.132	From weir above Bells Run reservoir.
Bells run,	Bellwood, Blair County,	Nov. 30, 1904,	14	....	2.24	0.160	From weir above Bells Run reservoir.
Bells run,	Bellwood, Blair County,	Dec. 5, 1904,	14	....	1.85	0.132	From weir above Bells Run reservoir.
Bells run,	Bellwood, Blair County,	Dec. 8, 1904,	14	....	1.74	0.124	From weir above Bells Run reservoir.
Bells run,	Bellwood, Blair County,	Dec. 15, 1904,	14	....	1.57	0.112	From weir above Bells Run reservoir; probably minimum flow.
Bells run,	Bellwood, Blair County,	Dec. 22, 1904,	14	....	1.57	0.112	From weir above Bells Run reservoir.
Bells run,	Bellwood, Blair County,	Dec. 23, 1904,	14	....	2.64	0.189	From weir above Bells Run reservoir.
Bennett Branch of Sinnemahoning creek.	Driftwood, Cameron County,	Sept. 11, 1908	356	....	17	0.048	Wading measurement 800 feet above highway bridge; referenced; minimum flow.
Bens creek,	Bens Creek, Cambria County,	Aug. 16, 1904,	4.5	....	2.89	0.642	From weir above intake.
Bens creek,	Bens Creek, Cambria County,	Aug. 30, 1904,	4.5	....	2.22	0.493	From weir above intake.
Bens creek,	Bens Creek, Cambria County,	Sept. 8, 1904,	4.5	....	1.79	0.398	From weir above intake.
Bens creek,	Bens Creek, Cambria County,	Sept. 22, 1904,	4.5	....	1.33	0.296	From weir above intake.
Bens creek,	Bens Creek, Cambria County,	Sept. 29, 1904,	4.5	....	1.13	0.251	From weir above intake.
Bens creek,	Bens Creek, Cambria County,	Nov. 9, 1904,	4.5	....	1.23	0.273	From weir above intake.

Stream.	Location.	Date.	Drainage area above point.	Gage height.	Total discharge.	Discharge per square mile of tributary drainage area.	Remarks.
Bens creek,	Bens Creek, Cambria County,	Nov. 22, 1904,	4.5		1.02	0.227	From weir above intake.
Bens creek,	Bens Creek, Cambria County,	Nov. 29, 1904,	4.5		1.07	0.238	From weir above intake.
Bens creek,	Bens Creek, Cambria County,	Dec. 5, 1904,	4.5		1.02	0.227	From weir above intake.
Bens creek,	Bens Creek, Cambria County,	Dec. 8, 1904,	4.5		1.12	0.249	From weir above intake.
Bens creek,	Bens Creek, Cambria County,	Dec. 14, 1904,	4.5		0.86	0.191	From weir above intake; probably minimum flow.
Bens creek,	Bens Creek, Cambria County,	Dec. 23, 1904,	4.5		1.67	0.371	From weir above intake.
Big Spring,	Tyrone, Blair County,	Jan. 28, 1908,			8.38		Weir measurement.
Big Spring,	Tyrone, Blair County,	Jan. 29, 1908,			6.67		Weir measurement.
Big Spring,	Tyrone, Blair County,	Jan. 30, 1908,			5.15		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 5, 1908,			6.40		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 6, 1908,			5.55		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 7, 1908,			5.55		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 8, 1908,			5.84		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 10, 1908,			3.98		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 11, 1908,			4.10		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 12, 1908.			4.23		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 13, 1908,			4.47		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 14, 1908,			5.01		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 15, 1908,			13.02		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 17, 1908,			11.22		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 18, 1908,			10.53		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 19, 1908,			10.53		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 20, 1908,			10.88		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 21, 1908,			10.34		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 22. 1908,			9.05		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 24, 1908,			8.71		Weir measurement.

Big Spring,	Tyrone, Blair County,	Feb. 25, 1908,			8.55		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 26, 1908,			8.55		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 27, 1908,			8.55		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 28, 1908,			8.24		Weir measurement.
Big Spring,	Tyrone, Blair County,	Feb. 29, 1908,			7.61		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 2, 1908,			8.55		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 3, 1908,			9.05		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 4, 1908,			8.71		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 5, 1908,			8.86		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 6, 1908,			11.59		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 7, 1908,			13.40		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 9, 1908,			13.02		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 10, 1908,			11.96		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 11, 1908,			11.59		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 12, 1906,			13.02		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 13, 1908,			13.21		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 14, 1908,			15.30		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 16, 1908,			14.33		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 17, 1908,			12.11		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 18, 1908,			11.59		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 19, 1908,			18.72		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 20, 1908,			14.17		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 21, 1908,			11.59		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 23, 1908,			10.53		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 24, 1908,			10.19		Weir measurement.
Big Spring,	Tyrone, Blair County,	Mar. 25, 1908,			10.19		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 2, 1908,			5.55		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 3, 1908,			5.55		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 4, 1908,			5.27		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 5, 1908,			5.41		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 6, 1908,			5.55		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 7, 1908,			6.26		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 8, 1908,			6.12		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 9, 1908,			6.70		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 11, 1908,			6.70		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 12, 1908,			6.70		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 13, 1908,			6.12		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 14, 1908,			6.12		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 15, 1908,			8.24		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 19, 1908,			5.83		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 20, 1908,			3.12		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 21, 1908,			3.12		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 22, 1908,			3.12		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 23, 1908,			3.12		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 24, 1908,			3.12		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 25, 1908,			3.12		Weir measurement.
Big Spring,	Tyrone, Blair County,	April 27, 1908,			5.83		Weir measurement.

Big Spring,	Tyrone, Blair County,	April 28, 1908,	--------	--------	5.55	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	April 29, 1908,	--------	--------	5.27	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	April 30, 1908,	--------	--------	5.01	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 1, 1908,	--------	--------	5.83	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 2, 1908,	--------	--------	5.27	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 4, 1908,	--------	--------	6.70	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 5, 1908,	--------	--------	7.30	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 6, 1908,	--------	--------	7.61	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 7, 1908,	--------	--------	9.19	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 8, 1908,	--------	--------	9.87	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 9, 1908,	--------	--------	9.53	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 11, 1908,	--------	--------	7.61	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 12, 1908,	--------	--------	7.30	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 13, 1908,	--------	--------	6.99	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 14, 1908,	--------	--------	6.55	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 15, 1908,	--------	--------	6.86	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 16, 1908,	--------	--------	7.00	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 18, 1908,	--------	--------	7.91	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 19, 1908,	--------	--------	8.08	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 20, 1908,	--------	--------	10.19	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 21, 1908,	--------	--------	9.53	--------	Weir measurement.
Big Spring,	Tyrone, Blair County,	May 22, 1908,	--------	--------	9.53	--------	Weir measurement.
Blairs Gap run,	Fountain Inn, Blair County,	Sept. 9, 1904,	--------	--------	0.53	--------	From weir.
Blairs Gap run,	Fountain Inn, Blair County,	Oct. 1, 1904,	--------	--------	0.25	--------	From weir.
Blairs Gap run,	Fountain Inn, Blair County,	Nov. 21, 1904,	--------	--------	0.16	--------	From weir.
Blairs Gap run,	Fountain Inn, Blair County,	Nov. 22, 1904,	--------	--------	0.16	--------	From weir.
Blairs Gap run,	Fountain Inn, Blair County,	Nov. 27, 1904,	--------	--------	0.13	--------	From weir; probably minimum flow.
Blairs Gap run,	At New Portage R. R. Crossing, Blair County.	Nov. 28, 1904,	--------	--------	0.53	--------	From weir at mouth.
Blairs Gap run,	At New Portage R. R. Crossing, Blair County.	Dec. 16, 1904,	--------	--------	0.45	--------	From weir at mouth.
Bowmans creek,	Noxen, Wyoming County,	June 3, 1909,	38	--------	27.6	0.726	Wading measurement 200 feet above school-house near R. R. bridge; referenced.
Bowmans creek,	Tunkhannock, Wyoming County,	Sept. 23, 1908,	120	--------	7.6	0.063	Wading measurement near mouth 300 feet below ford; minimum flow.
Buffalo creek,	Lewisburg, Union County,	Sept. 17, 1908,	128	--------	40	0.312	Wading measurement 100 feet above iron bridge; referenced; low flow.
Carpenter run,	Blossburg, Tioga County,	Sept. 15, 1908,	2.7	--------	0.05	0.019	From 3 foot weir.
Catawissa creek,	Catawissa, Columbia County,	Sept. 26, 1908,	153	--------	5.96	0.039	Wading measurement 300 feet above second highway bridge from mouth; minimum flow.
Chillisquaque creek,	Kapps, Northumberland County,	Sept. 16, 1908,	109	--------	2.97	0.027	Wading measurement near wooden bridge at Deifenderfer's farm, near mouth; minimum flow; referenced.
Clearfield creek,	Wildwood, Cambria County,	Nov. 1903,	13.5	--------	2.45	0.181	
Clearfield creek,	Wildwood, Cambria County,	Sept. 13, 1904,	13.5	--------	0.93	0.069	From weir above Pa. Ice Co.'s dam.
Clearfield creek,	Wildwood, Cambria County,	Nov. 29, 1904,	13.5	--------	1.50	0.111	From weir above Pa. Ice Co.'s dam.

Clearfield creek,	Wildwood, Cambria County,	Dec. 16, 1904,	13.5	....	0.93	0.069	From weir above Po. Ice Co.'s dam; probably minimum flow.
Codorus creek,	Emigsville, York County,	Sept. 29, 1909,	256	0.67	52	0.203	Wading measurement 1200 feet below bridge at Rudy's Mill at former gaging station.
Codorus creek,	Emigsville, York County,	Oct. 28, 1909,	256	0.68	44	0.172	Wading measurement 1200 feet below bridge at Rudy's Mill at former gaging station; low flow.
Codorus creek,	York, York County,	Sept. 15, 1908,	223	....	53	0.238	Wading measurement 300 feet below boathouse at Highland Park; limestone stream.
Conestoga creek,	Eden, Lancaster County,	Sept. 20, 1908,	313	....	62	0.198	Wading measurement 200 feet below trolley bridge; minimum flow; limestone stream.
Conestoga creek,	Lancaster, Lancaster County,	July 28, 1909,	320	....	74	0.231	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Aug. 23, 1909,	320	....	73	0.228	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 5, 1909,	320	....	39	0.122	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 6, 1909,	320	....	28	0.088	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 7, 1909,	320	....	63	0.197	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 8, 1909,	320	....	54	0.169	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 9, 1909,	320	....	54	0.169	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 10, 1909,	320	....	62	0.194	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 11, 1909,	320	....	68	0.212	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 12, 1909,	320	....	69	0.216	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 13, 1909,	320	....	42	0.131	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 14, 1909,	320	....	74	0.231	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 15, 1909,	320	....	62	0.194	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 16, 1909,	320	....	57	0.178	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 17, 1909,	320	....	104	0.325	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 18, 1909,	320	....	105	0.328	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 19, 1909,	320	....	82	0.256	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 20, 1909,	320	....	67	0.209	Computed flow above intake of Lancaster Water Works.

Conestoga creek	Lancaster, Lancaster County,	Sept. 21, 1909,	320	--------	78	0.244	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 22, 1909,	320	--------	67	0.209	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 23, 1909,	320	--------	69	0.216	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 24, 1909,	320	--------	69	0.216	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 25, 1909,	320	--------	73	0.228	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 26, 1909,	320	--------	61	0.191	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 27, 1909,	320	--------	49	0.153	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 28, 1909,	320	--------	69	0.216	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 29, 1909,	320	--------	59	0.184	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Sept. 30, 1909,	320	--------	59	0.184	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 1, 1909,	320	--------	66	0.206	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 2, 1909,	320	--------	60	0.187	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 3, 1909,	320	--------	53	0.166	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 4, 1909,	320	--------	41	0.128	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 5, 1909,	320	--------	65	0.203	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 6, 1909,	320	--------	62	0.194	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 7, 1909,	320	--------	59	0.184	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 8, 1909,	320	--------	60	0.187	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 9, 1909,	320	--------	53	0.166	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 10, 1909,	320	--------	53	0.166	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 12, 1909,	320	--------	73	0.228	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 13, 1909,	320	--------	87	0.272	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 14, 1909,	320	--------	82	0.256	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 15, 1909,	320	--------	69	0.216	Computed flow above intake of Lancaster Water Works.

Conestoga creek,	Lancaster, Lancaster County,	Oct. 16, 1909,	320		75	0.234	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 17, 1909,	320		51	0.159	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 18, 1909,	320		50	0.156	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 19, 1909,	320		71	0.222	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 20, 1909,	320		59	0.184	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 21, 1909,	320		66	0.206	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 22, 1909,	320		53	0.166	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 23, 1909,	320		52	0.162	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 24, 1909,	320		57	0.178	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 25, 1909,	320		69	0.216	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 26, 1909,	320		75	0.234	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 27, 1909,	320		76	0.238	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 28, 1909,	320		73	0.228	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 29, 1909,	320		73	0.228	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 30, 1909,	320		62	0.194	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Oct. 31, 1909,	320		61	0.191	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 1, 1909,	320		46	0.144	Computed flow above intake of Lancaster Water Works.
Conestoga creek	Lancaster, Lancaster County,	Nov. 2, 1909,	320		74	0.231	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 3, 1909,	320		60	0.187	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 4, 1909,	320		55	0.172	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 5, 1909,	320		59	0.184	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 6, 1909,	320		59	0.184	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 7, 1909,	320		58	0.181	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 8, 1909,	320		39	0.122	Computed flow above intake of Lancaster Water Works.

Conestoga creek,	Lancaster, Lancaster County,	Nov. 9, 1909,	320		63	0.197	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 10, 1909,	320		62	0.194	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 11, 1909,	320		64	0.200	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 12, 1909,	320		62	0.194	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 13, 1909,	320		63	0.197	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 14, 1909,	320		56	0.175	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 15, 1909,	320		43	0.134	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 16, 1909,	320		66	0.206	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 17, 1909,	320		58	0.181	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 18, 1909,	320		58	0.181	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 19, 1909,	320		59	0.184	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 20, 1909,	320		62	0.194	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 21, 1909,	320		61	0.191	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 22, 1909,	320		32	0.100	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 23, 1909,	320		66	0.206	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 24, 1909,	320		55	0.172	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 25, 1909,	320		69	0.216	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 26, 1909,	320		66	0.206	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 27, 1909,	320		70	0.219	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 28, 1909,	320		64	0.200	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 29, 1909,	320		66	0.206	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Nov. 30, 1909,	320		73	0.228	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 1, 1909,	320		76	0.238	Computed flow above intake of Lancaster Water Works.

Conestoga creek,	Lancaster, Lancaster County,	Dec. 2, 1909,	320	--------	70	0.219	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 3, 1909,	320	--------	70	0.219	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 4, 1909,	320	--------	68	0.212	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 5, 1909,	320	--------	61	0.191	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 6, 1909,	320	--------	54	0.169	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 7, 1909,	320	--------	65	0.203	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 8, 1909,	320	--------	63	0.197	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 9, 1909,	320	--------	71	0.222	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 10, 1909,	320	--------	74	0.231	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 11, 1909,	320	--------	67	0.209	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 12, 1909,	320	--------	65	0.203	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 13, 1909,	320	--------	55	0.172	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 16, 1909,	320	--------	98	0.306	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 17, 1909,	320	--------	90	0.281	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 18, 1909,	320	--------	87	0.272	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 19, 1909,	320	--------	82	0.256	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 20, 1909,	320	--------	78	0.244	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 21, 1909,	320	--------	82	0.256	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 22, 1909,	320	--------	79	0.247	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 23, 1909,	320	--------	76	0.238	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 24, 1909,	320	--------	75	0.234	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 25, 1909,	320	--------	71	0.222	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 26, 1909,	320	--------	69	0.216	Computed flow above intake of Lancaster Water Works.

Conestoga creek,	Lancaster, Lancaster County,	Dec. 28, 1909,	320	....	75	0.234	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 29, 1909,	320	....	77	0.241	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 30, 1909,	320	....	74	0.231	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Dec. 31, 1909,	320	....	75	0.234	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Jan. 1, 1910,	320	....	77	0.241	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Jan. 2, 1910,	320	....	79	0.247	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Jan. 3, 1910,	320	....	79	0.247	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Jan. 4, 1910,	320	....	81	0.253	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Jan. 5, 1910	320	....	78	0.244	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Jan. 5, 1910,	320	....	78	0.244	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Jan. 10, 1910,	320	....	93	0.291	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Jan. 12, 1910,	320	....	88	0.275	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Jan. 13, 1910,	320	....	87	0.272	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Jan. 14, 1910,	320	....	87	0.272	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Jan. 15, 1910,	320	....	88	0.275	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Jan. 16, 1910,	320	....	82	0.256	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Jan. 17, 1910,	320	....	92	0.288	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Jan. 18, 1910,	320	....	88	0.275	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Jan. 19, 1910,	320	....	96	0.300	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Jan. 20, 1910,	320	....	116	0.362	Computed flow above intake of Lancaster Water Works.
Conestoga creek,	Lancaster, Lancaster County,	Jan. 21, 1910,	320	....	127	0.397	Computed flow above intake of Lancaster Water Works.
Conewago creek,	York Haven, York County,	Sept. 16, 1908,	503	....	33	0.066	Wading measurement immediately above delta of creek; minimum flow.
Conodoguinet creek,	Camp Hill, Cumberland County,	June 29, 1910,	472	2.05	550	1.165	Wading measurement at former gaging station on Orr's Bridge; limestone stream.

Conodoguinet creek,	Camp Hill, Cumberland County,	July 28, 1910,	472	1.76	301	0.638	Wading measurement at former gaging station on Orr's Bridge.
Conodoguinet creek,	Camp Hill, Cumberland County,	April 3, 1911,	472	1.69	489	1.036	From Orr's Bridge.
Conodoguinet creek,	Camp Hill, Cumberland County,	May 23, 1911,	472	1.64	304	0.644	From Orr's Bridge.
Conodoguinet creek,	West Fairview, Cumberland Co.,	Sept. 11, 1908,	484	--------	188	0.388	Wading measurement a short distance above mouth; low water; referenced.
Driftwood Br. of Sinnemahoning creek.	Driftwood, Cameron County,	Sept. 11, 1908,	314	--------	11	0.035	Wading measurement 200 feet above highway bridge; minimum flow; referenced.
*Fishing creek,	Bloomsburg, Columbia County,	Sept. 15, 1908,	372	--------	83	0.223	Wading measurement 1 mile west of Bloomsburg; referenced; **flow perhaps increased by storage.**
Fishing creek,	High Bridge, Schuylkill County,	Jan. 11, 1909,	16	--------	29	1.812	
Frankstown Branch of Juniata river.	Warrior Ridge, Huntingdon Co.,	Sept. 9, 1908,	836	630.75	281	0.336	Wading measurement in tail race of power plant; limestone stream.
Frankstown Branch of Juniata river.	Water Street, Huntingdon Co.,	Sept. 19, 1908,	380	--------	132	0.347	Wading measurement 500 feet below R. R. Station; referenced, limestone stream.
Frankstown Branch of Juniata river.	Water Street, Huntingdon Co.,	Nov. 14, 1908,	380	--------	110	0.289	Wading measurement 500 feet below R. R. station; referenced; limestone stream.
Hartman's Spring run,	Royer, Blair County,	April 29, 1908,	--------	--------	1.64	--------	From 5 ft. weir.
Kettle run,	Altoona, Blair County,	Oct. 17, 1904,	2.5	--------	0.42	0.168	From weir above Brush Mt. Res.
Kettle run,	Altoona, Blair County,	Nov. 17, 1904,	2.5	--------	0.28	0.112	From weir above Brush Mt. Res.
Kettle run,	Altoona, Blair County,	Nov. 30, 1904,	2.5	--------	0.24	0.096	From weir above Brush Mt. Res.
Kettle run,	Altoona, Blair County,	Dec. 8, 1904,	2.5	--------	0.23	0.092	From weir above Brush Mt. Res.; probably minimum flow.
Kishacoquillas creek,	Burnham, Mifflin County,	Sept. 10, 1908,	172	0.48	33	0.192	From highway bridge at Standard Steel Co.'s Works; limestone stream; minimum flow.
Laurel run,	Bellwood, Blair County,	Sept. 19, 1904,	8.8	--------	0.33	0.038	From weir.
Laurel run,	Bellwood, Blair County,	Oct. 19, 1904,	8.8	--------	0.33	0.038	From weir.
Laurel run,	Bellwood, Blair County,	Nov. 26, 1904,	8.8	--------	0.33	0.038	**From weir; probably minimum flow.**
Laurel run,	Bellwood, Blair County,	Nov. 30, 1904,	8.8	--------	0.37	0.042	From weir.
Laurel run,	Bellwood, Blair County,	Jan. 6, 1905,	8.8	--------	2.44	0.277	From weir.
Lick run,	Farrandsville, Clinton County,	Sept. 9, 1908,	39	--------	3.80	0.097	Wading measurement 800 feet above Whiskey run; referenced; minimum flow.
Little Muncy creek,	The Forks, Lycoming County,	Oct. 23, 1908,	84	--------	5.68	0.068	Wading measurement; referenced; minimum flow.
Little Pine creek,	Waterville, Lycoming County,	Oct. 21, 1908,	171	--------	17	0.099	Wading measurement 2000 feet above Waterville; referenced; minimum flow.
Little Swatara creek,	Jonestown, Lebanon County,	Sept. 30, 1908,	96	--------	58	0.604	Wading measurement at bend below highway bridge; referenced; rain.
Little Swatara creek,	Jonestown, Lebanon County,	May 17, 1911,	96	--------	98	1.021	Wading measurement ½ mile below wooden bridge; referenced.
Little Wapwallopen creek,	Luzerne County,	June 14, 1905,	--------	--------	8.29	--------	From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	June 15, 1905,	--------	--------	3.65	--------	From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	June 16, 1905,	--------	--------	3.65	--------	From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	June 17, 1905,	--------	--------	3.17	--------	From 10 ft. weir.

* In connection with studies for the Pennsylvania Canal, a measurement of Fishing Creek was recorded to have been made by Paxton on October 5, 1837 and the flow found to be 40 sec. ft.

Little Wapwallopen creek,	Luzerne County,	June 18, 1905,			2.26		From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	June 19, 1905,			21.63		From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	June 20, 1905,			18.12		From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	June 21, 1905,			11.77		From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	June 22, 1905,			18.12		From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	June 23, 1905,			13.27		From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	June 24, 1905,			11.77		From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	June 25, 1905,			7.65		From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	June 26, 1905,			4.16		From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	June 27, 1905,			3.65		From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	June 28, 1905,			3.65		From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	June 29, 1905,			3.17		From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	June 30, 1905,			1.85		From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	July 1, 1905,			1.47		From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	July 2, 1905,			1.47		From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	July, 3, 1905,			1.47		From 10 ft. weir.
Little Wapwallopen creek,	Luzerne County,	July 4, 1905,			2.70		From 10 ft. weir.
Loyalsock creek,	Eaglesmere, Sullivan County,	June 20, 1906,			546		At Whirls Glenn.
Loyalsock creek,	Eaglesmere, Sullivan County,	June 21, 1906,			482		At Whirls Glenn.
Loyalsock creek,	Eaglesmere, Sullivan County,	June 23, 1906,			227		At Whirls Glenn.
Loyalsock creek,	Farragut, Lycoming County,	Oct. 22, 1908,			43		Wading measurement 100 ft. above island at Hayes Mill.
Loyalsock creek (So. Fk.),	Eaglesmere, Sullivan County,	June 21, 1904,			62		
Loyalsock creek (So. Fk.),	Eaglesmere, Sullivan County,	June 22, 1904,			54		
Loyalsock creek (So. Fk.),	Eaglesmere, Sullivan County,	June 23, 1904,			45		
Loyalsock creek (So. Fk.),	Eaglesmere, Sullivan County,	June 23, 1905,			135		
Loyalsox creek (So. Fk.),	Eaglesmere, Sullivan County,	June 24, 1905,			102		
McAllisters Spring run,	Royer, Blair County,	April 29, 1908,			2.20		From 5 ft. weir.
McElhattan creek,	McElhattan, Clinton County,	Sept. 9, 1908,	15		5.92	0.395	Wading measurement 600 feet above dam of Lock Haven Water Co.; minimum flow.
Mahanoy creek,	Herndon, Northumberland County,	Oct. 24, 1908,	155		33	0.213	Wading measurement ¼ mile above mouth.
Manada creek,	Sandy Beech, Dauphin County,	Sept. 12, 1908,	28		6.93	0.248	From foot bridge 2½ miles up from Sandy Beech; referenced; minimum flow.
Middle creek,	Kantz, Snyder County,	Sept. 18, 1908,	146		17	0.116	Wading measurement; referenced; minimum flow.
Mill (East) creek,	Montoursville, Lycoming County,	Oct. 22, 1908,	20		1.46	0.073	Wading measurement 300 feet above county bridge; referenced; minimum flow.
Muddy creek,	Castle Fin, York County,	Sept. 16, 1908,	131		69	0.527	Wading measurement ½ mile below Castle Fin; low flow; limestone stream.
Muncy creek,	The Forks, Lycoming County,	Oct. 23, 1908,	125		9.39	0.075	Wading measurement just above forks; minimum flow.
Nescopeck creek,	Nescopeck, Luzerne County,	Sept. 25, 1908,	172		32	0.186	Wading measurement 300 feet above R. R. bridge; referenced; minimum flow; augmented by mine pumpage.
North Branch of Susquehanna river.	Wysox, Bradford County,	Sept. 3, 1908,	7930	2.30	708	0.089	Measurement made at riffle .7 mile above **bridge.**

North Branch of Susquehanna river.	Wysox, Bradford County,	Sept. 22, 1908,	7930	2.08	465	0.059	Measurement made at riffle .7 mile above bridge; minimum flow.
North Branch of Susquehanna river.	Wysox, Bradford County,	April 24, 1909,	7930	5.75	13800	1.740	
North Branch of Susquehanna river.	Wysox, Bradford County,	May 4, 1909,	7930	9.38	37600	4.741	
North Branch of Susquehanna river.	Wysox, Bradford County,	June 4, 1909,	7930	3.40	3290	0.415	
Paddys run,	Renovo, Clinton County,	Aug. 13, 1909,	20	805.5	4.2	0.210	Wading measurement 1½ miles above mouth.
Penns creek,	Selinsgrove, Snyder County,	Sept. 18, 1908,	380		65	0.171	Wading measurement 4 miles above Selinsgrove; referenced; low flow; limestone stream.
Pequa creek,	Martic Forge, Lancaster County,	Sept. 20, 1908,	146		39	0.267	Wading measurement below bridge; referenced; low flow.
Piney creek,	Royer, Blair County,	May 13, 1908,	17		26.12	1.536	From 18.08 ft. weir.
Pond creek,	Luzerne County,	June 14, 1905,			2.82		Weir measurement.
Pond creek,	Luzerne County,	June, 15, 1905,			2.82		Weir measurement.
Pond creek,	Luzerne County,	June 16, 1905,			2.19		Weir measurement.
Pond creek,	Luzerne County,	June 17, 1905,			2.50		Weir measurement.
Pond creek,	Luzerne County,	June 18, 1905,			2.50		Weir measurement.
Pond creek,	Luzerne County,	June 19, 1905,			2.82		Weir measurement.
Pond creek,	Luzerne County,	June 20, 1905,			3.15		Weir measurement.
Pond creek,	Luzerne County,	June 21, 1905,			2.34		Weir measurement.
Pond creek,	Luzerne County,	June 22, 1905,			2.19		Weir measurement.
Pond creek,	Luzerne County,	June 23, 1905,			3.49		Weir measurement.
Pond creek,	Luzerne County,	June 25, 1905,			2.19		Weir measurement.
Pond creek,	Luzerne County,	June 26, 1905,			1.90		Weir measurement.
Pond creek,	Luzerne County,	June 28, 1905,			1.90		Weir measurement.
Pond creek,	Luzerne County,	June 29, 1905,			1.36		Weir measurement.
Pond creek,	Luzerne County,	June 30, 1905,			1.36		Weir measurement.
Pond creek,	Luzerne County,	July 1, 1905,			1.36		Weir measurement.
Pond creek,	Luzerne County,	July 2, 1905,			1.36		Weir measurement.
Pond creek,	Luzerne County,	July 3, 1905,			1.36		Weir measurement.
Pond creek,	Luzerne County,	July 4, 1905,			3.49		Weir measurement.
Quittapahilla creek,	Lebanon, Lebanon County,	Sept. 30, 1908,	33	1.24	7.4	0.224	From 16th St. Bridge.
Quittapahilla creek,	Lebanon, Lebanon County,	Feb. 24, 1909,	33	2.19	52	1.576	From 16th St. Bridge.
Quittapahilla creek,	Lebanon, Lebanon County,	Mar. 10, 1909,	33	1.76	26	0.788	From 16th St. Bridge.
Quittapahilla creek,	Lebanon, Lebanon County,	April 15, 1909,	33	1.50	16	0.485	From foot bridge 1600 feet below 16th St.
Quittapahilla creek,	Lebanon, Lebanon County,	Jan. 22, 1910,	33	2.61	120	3.636	From 16th St. Bridge.
Quittapahilla creek,	Lebanon, Lebanon County,	Jan. 22, 1910,	33	2.42	101	3.061	From 16th St. Bridge.
Quittapahilla creek,	Lebanon, Lebanon County,	Jan. 22, 1910,	33	2.16	82	2.485	From 16th St. Bridge.
Quittapahilla creek,	Lebanon, Lebanon County,	Jan. 22, 1910,	33	2.05	74	2.242	From 16th St. Bridge.
Quittapahilla creek,	Lebanon, Lebanon County,	May 17, 1911,	33	1.45	16	0.485	From 16th St. Bridge.
Quittapahilla creek,	Lebanon, Lebanon County,	Aug. 18, 1911,	33	0.85	5.6	0.170	From foot bridge 1600 feet below 16th St.
Quittapahilla creek,	Lebanon, Lebanon County,	Dec. 8, 1911,	33	1.20	21	0.636	From 16th St. Bridge.
Quittapahilla creek,	Lebanon, Lebanon County,	Dec. 27, 1911,	33	1.56	27	0.818	From 16th St. Bridge.

Quittapahilla creek,	Lebanon, Lebanon County,	Mar. 15, 1912	33	4.18	309	9.364	From 16th St. Bridge.
Rapid run,	Cowan, Union County,	Sept. 17, 1908,	25	--------	7.7	0.308	From highway bridge above Cowan; referenced; minimum flow.
Raystown Branch of Juniata river.	Hawn's bridge, Huntingdon Co.,	July 26, 1907,	1005	3.83	323	0.321	Wading measurement below fish dam at former gaging station.
Raystown Branch of Juniata river.	Hawn's bridge, Huntingdon Co.,	Oct. 12, 1907,	1005	3.84	232	0.231	Measurement from bridge at former gaging station. Measurement affected by fish dam.
Raystown Branch of Juniata river.	Hawn's bridge, Huntingdon Co.,	Feb. 18, 1908,	1005	6.48	3798	3.779	Measurement from bridge at former gaging station.
Raystown Branch of Juniata river.	Hawn's bridge, Huntingdon Co.,	Mar. 10, 1908,	1005	9.35	10045	9.995	Measurement from bridge at former gaging station.
Raystown Branch of Juniata river.	Hawn's bridge, Huntingdon Co.,	Mar. 20, 1908,	1005	12.80	19830	19.731	Measurement from bridge at former gaging station.
Raystown Branch of Juniata river.	Hawn's bridge, Huntingdon Co.,	Sept. 8, 1908,	1005	3.73	105	0.104	At former gaging station; minimum flow. Gage height affected by fish dam. Limestone stream.
Raystown Branch of Juniata river.	Hawn's bridge, Huntingdon Co.,	Nov. 13, 1908,	1005	3.85	120	0.119	Wading measurement 2000 feet below bridge at former gaging station. Gage height affected by fish dam.
Roaring creek,	Roaring Creek, Columbia County,	Sept. 26, 1908,	90	--------	4.4	0.049	Wading measurement 1500 feet above 1st dam. Locust Mountain, Roaring Creek and Bear Gap Water Companies obtain their water supplies from South Branch Roaring Creek.
Shamokin creek,	Sunbury, Northumberland County,	Sept. 16, 1908.	136	--------	22	0.162	From highway bridge; referenced; minimum flow; augmented by mine pumpage.
Shermans creek,	Duncannon, Perry County,	Aug. 22, 1911,	247	--------	34	0.138	Wading measurement 200 feet above bridge 4 miles above mouth.
Sinnemahoning creek,	Sinnemahoning, Cameron County,	Sept. 11, 1908,	--------	--------	15	--------	Wading measurement 2000 feet above bridge. Referenced.
Smokers run,	Covedale, Blair County,	May 8, 1905,	2.5	--------	1.4	0.560	From 3 ft. weir.
Snares run,	Clover Creek, Blair County,	May 8, 1905,	1	--------	0.26	0.260	From 2 ft. weir.
Spring No. 8,	Shoenberger, Huntingdon County,	Sept. 22, 1904,	--------	--------	2.64	--------	From weir.
Spring No. 8,	Shoenberger, Huntingdon County,	Dec. 2, 1904,	--------	--------	4.18	--------	From weir.
Spring creek,	Bellefonte, Center County,	Sept. 15, 1898,	34	--------	80	2.353	Weir measurement above Logans run; limestone stream.
Spring creek,	Harrisburg, Dauphin County,	Feb. 15, 1908,	11.6	--------	2577	222.155	Float measurement during great flood.
Spring creek,	Harrisburg, Dauphin County,	Sept. 12, 1908,	11.6	--------	4.6	0.397	Wading measurement 200 feet above Cameron St. bridge; referenced.
Spring creek,	Colerain Forge, Huntingdon Co.,	Sept. 9, 1908,	108	--------	64	0.593	Measurement from bridge; referenced; low flow; limestone streams.
South Branch of Mehoopany creek.	Forkston, Wyoming County,	June 3, 1909,	55	--------	31	0.564	Wading measurement at Cynths Bridge, 4 miles above Forkston; referenced.
Standing stone creek,	Huntingdon, Huntingdon County,	Sept. 19, 1908,	110	--------	17	0.155	Wading measurement below highway bridge 3 miles above Huntingdon; referenced; minimum flow.

Sugar creek,	Towanda, Bradford County,	Sept. 24, 1908,	190		0.65	0.003	Wading measurement 300 feet above iron bridge; minimum flow.
Swatara creek,	Derry, Dauphin County,	Sept. 12, 1908,	458		125	0.273	At ford between Sandy Beech and Derry; minimum flow; augmented by mine pumpage.
Taylor run,	Blossburg, Tioga County,	Sept. 15, 1908,	3.9		0.07	0.018	From 3 ft. weir; minimum flow.
Tipton run,	Bellwood, Blair County,	Sept. 8, 1904,	12		3.33	0.278	From weir at junction of Tipton and Loop runs.
Tipton run,	Bellwood, Blair County,	Sept. 22, 1904,	12		2.93	0.244	From weir at junction of Tipton and Loop runs.
Tipton run,	Bellwood, Blair County,	Nov. 3, 1904,	12		1.86	0.155	From weir at junction of Tipton and Loop runs.
Tipton run,	Bellwood, Blair County,	Nov. 17, 1904,	12		2.08	0.173	From weir at junction of Tipton and Loop runs.
Tipton run,	Bellwood, Blair County,	Nov. 26, 1904,	12		1.86	0.155	From weir at junction of Tipton and Loop runs.
Tipton run,	Bellwood, Blair County,	Dec. 14, 1904,	12		1.97	0.164	From weir just above pump.
Tipton run,	Bellwood, Blair County,	Dec. 15, 1904,	12		1.79	0.149	From weir just above pump.
Tipton run,	Bellwood, Blair County,	Dec. 16, 1904,	12		1.73	0.144	From weir just above pump; probably minimum flow.
Tipton run,	Bellwood, Blair County,	Dec. 17, 1904,	12		1.85	0.154	From weir just above pump.
Tipton run,	Bellwood, Blair County,	Dec. 23, 1904,	12		2.52	0.210	From weir just above pump.
Towanda creek,	Towanda, Bradford County,	Sept. 24, 1908,	282		8.6	0.030	Wading measurement 100 feet above wooden bridge 1 mile above mouth; referenced; minimum flow.
Towanda creek,	Towanda, Bradford County,	Feb. 26, 1909,	282		918	3.255	From downstream side of wooden bridge; referenced.
Trout run,	Barree, Huntingdon County,	Sept. 7, 1904,			1.02		From weir.
Trout run,	Barree, Huntingdon County,	Sept. 8, 1904,			1.08		From weir.
Trout run,	Barree, Huntingdon County,	Sept. 16, 1904,			1.02		From weir.
Trout run,	Barree, Huntingdon County,	Nov. 21, 1904,			0.70		From weir.
Trout run,	Barree, Huntingdon County,	Dec. 19, 1904,			0.22		From weir; probably minimum flow.
Tunkhannock creek,	Tunkhannock Wyoming County,	Sept. 23, 1908,	414		20	0.048	Wading measurement 1000 feet below highway bridge below light company's dam; referenced; minimum flow.
Tuscarora creek,	Port Royal, Juniata County,	Sept. 10, 1908,	255		23	0.090	Wading measurement 150 feet below mouth of Licking creek; minimum flow.
Wapwallopen creek,	Wapwallopen, Luzerne County,	Sept. 25, 1908,			7.16		Wading measurement 800 feet above 3rd falls from mouth; minimum flow.
White Deer creek,	Forestville, Union County,	Sept. 7, 1903,	43		47.03	1.094	From 158 inches weir, 3½ miles above mouth; dam leaking.
White Deer creek,	Forestville, Union County,	Sept. 7, 1903,	43		47.46	1.104	From 158 inches weir, 3½ miles above mouth; leakage reduced.
White Deer creek,	Forestville, Union County,	Sept. 8, 1903,	43		54.90	1.277	From 158 inches weir, 3½ miles above mouth; gate leaking.
White Deer creek,	Forestville, Union County,	Sept. 8, 1903,	43		55.74	1.296	From 158 inches weir, 3½ miles above mouth; less leakage.

White Deer creek,	Forestville, Union County,	Sept. 10, 1903,	43	--------	49.88	1.160	From 158 inch weir, 3½ miles above mouth; dam O. K.
White Deer creek,	Forestville, Union County,	Sept. 10, 1903,	43	--------	49.16	1.143	From 158 inch weir, 3½ miles above mouth.
White Deer creek,	Forestville, Union County,	Sept. 10, 1903,	43	--------	47.03	1.094	From 158 inch weir, 3½ miles above mouth.
White Deer creek,	Forestville, Union County,	Sept. 15, 1903,	43	--------	45.63	1.061	From 158 inch weir, 3½ miles above mouth.
White Deer creek,	Forestville, Union County,	Sept. 18, 1903,	43	--------	71.32	1.659	From 158 inch weir, 3½ miles above mouth.
White Deer creek,	Forestville, Union County,	Sept. 19, 1903,	43	--------	58.76	1.367	From 158 inch weir, 3½ miles above mouth.
White Deer creek,	Forestville, Union County,	Sept. 23, 1903,	43	--------	44.93	1.045	From 158 inch weir, 3½ miles above mouth.
White Deer creek,	Forestville, Union County,	Sept. 25, 1903,	43	--------	41.50	0.965	From 158 inch weir, 3½ miles above mouth.
White Deer creek,	Forestville, Union County,	Oct. 2, 1903,	43	--------	29.33	0.682	From 158 inch weir, 3½ miles above mouth.
White Deer creek,	Forestville, Union County,	Oct. 6, 1903,	43	--------	29.94	0.696	From 144 inch weir, dam leaking.
White Deer creek,	Forestville, Union County,	Sept. 6, 1904,	43	--------	6.35	0.148	From 144 inch weir, dam repaired.
White Deer creek,	Forestville, Union County,	Sept. 7, 1904,	43	--------	6.69	0.156	From 144 inch weir, dam O. K.
White Deer creek,	Forestville, Union County,	Sept. 17, 1904,	43	--------	7.39	0.172	From 144 inch weir, dam in good order.
White Deer creek,	Forestville, Union County,	Sept. 8, 1904,	43	--------	6.35	0.148	
Wiconisco creek,	Millersburg, Dauphin County,	Oct. 24, 1908,	115	--------	15	1.130	Wading measurement in tail race of grist mill 1500 feet above mouth; augmented by coal mine pumpage.
Wiconisco creek,	Elizabethville, Dauphin County,	Aug. 23, 1911,	78	--------	26	0.333	From bridge one mile from Elizabethville; referenced.
Wysox creek,	Wysox, Bradford County,	Sept. 24, 1908,	100	--------	1.4	0.014	Wading measurement 300 feet above covered wooden bridge; referenced; minimum flow.

POTOMAC BASIN.

Antietam creek,	Hagerstown, Md.,	Oct. 2, 1898,	--------	1.80	70	--------	At Stonebreakers Paper Mill; gage height at Sharpsburg, Md.
Conococheague creek,	Caledonia Park, Franklin County,	Dec. 2, 1908,	18	--------	3.7	0.206	Weir measurement at mouth of Hosacks run.
Conococheague creek,	Caledonia Park, Franklin County,	Dec. 4, 1909,	13.3	--------	3.67	0.276	From 6 foot weir below junction Birch run and Little Conococheague creek; low flow.
Conococheague creek,	Williamsport, Md.,	Oct. 2, 1897,	--------	--------	198	--------	Wading measurement 500 feet below N. E. Turnpike Bridge.
Evitts creek,	Cumberland, Md.,	Sept. 25, 1897,	110	--------	21	0.191	Wading measurement 200 yards above R. R. bridge near Cumberland, Md.
Licking creek,	Ernstville, Md.,	Oct. 1, 1897,	195	--------	22	0.113	Wading measurement above C. & O. canal aqueduct.
Marsh Run,	Hagerstown, Md.,	Oct. 9, 1897,	--------	--------	4	--------	At street crossing below south end of drain.

Wills creek,	Cumberland, Md.,	Sept. 28, 1897,	240	--------	12	0.050	Above paper mill near Cumberland, Md.
Wills creek,	Cumberland, Md.,	May 12, 1898,	240	--------	381	1.590	From pulp mill bridge, Cumberland, Md.
Wills creek,	Cumberland, Md.,	May 13, 1898,	240	--------	368	1.533	From pulp mill bridge, Cumberland, Md.

OHIO BASIN.

Allegheny river,	Aspinwall, Allegheny County,	Mar. 9, 1907,	11670	24.50	36481	3.126	From revetment steps about 1500 feet above bridge.
Allegheny river,	Aspinwall, Allegheny County,	May 28, 1907,	11670	20.50	31809	2.726	From Brilliant Bridge.
Allegheny river,	Aspinwall, Allegheny County,	Aug. 13, 1907,	11670	14.50	2990	0.257	From Brilliant Bridge.
Allegheny river,	Aspinwall, Allegheny County,	Aug. 26, 1907,	11670	17.20	6069	0.520	From Brilliant Bridge.
Allegheny river,	Aspinwall, Allegheny County,	Sept. 11, 1907,	11670	18.85	7781	0.667	From Brilliant Bridge.
Allegheny river,	Aspinwall, Allegheny County,	Oct. 2, 1907,	11670	18.40	5202	0.446	From revetment steps about 1500 feet above bridge.
Allegheny river,	Aspinwall, Allegheny County,	Dec. 24, 1907,	11670	28.55	68982	5.911	From Brilliant Bridge.
Allegheny river,	Pittsburgh, Allegheny County,	Mar. 15, 1907,	11775	35.50	236834	20.113	Surface floats. Market St. gage. Crest of greatest flood.
Allegheny river,	Pittsburgh, Allegheny County,	Feb. 16, 1908,	11775	30.70	209169	17.764	Surface floats. Market St. gage.
Allegheny river,	Pittsburgh, Allegheny County,	Feb. 18, 1908,	11775	15.50	108024	9.174	Surface floats. Pittsburgh gage.
Allegheny river,	Tarentum, Allegheny County,	Sept. 15, 1908,	11524	0.40	1356	0.118	Gage height at Freeport.
Allegheny river,	Tarentum, Allegheny County,	Sept. 25, 1908,	11524	0.30	972	0.084	Gage height at Freeport. Minimum flow.
Allegheny river,	Tionesta, Forest County,	Aug. 25, 1908,	3740	------	1031	0.276	
Allegheny river,	Tionesta, Forest County,	Sept. 28, 1908,	3740	------	375	0.100	Wading measurement ¼ mile N. highway bridge; minimum flow.
Allegheny river,	Warren, Warren County,	Aug. 25, 1908,	3160	—0.17	882	0.279	From suspension bridge.
Beans run,	Pollocks Bridge, Crawford County,	July 23, 1909,	2.6	------	1.37	0.527	Wading measurement 150 feet above highway bridge.
Black Jack run,	Pollocks Bridge, Crawford County,	July 23, 1909,	3.5	------	0.68	0.194	Wading measurement near wooden stringer bridge.
Chartiers creek,	Arden, Washington County,	June 28, 1906,	37	974.2	17	0.459	
Chartiers creek,	Arden, Washington County,	July 4, 1906,	37	974.0	12	0.324	
Chartiers creek,	Arden, Washington County,	July 12, 1906,	37	973.8	7	0.189	
Chartiers creek,	McKees Rocks, Allegheny County,	Sept. 27, 1908,	275	------	11.11	0.040	Measurement between R. R. bridge and wooden bridge; reference; minimum flow.
Bennett Run,	Espyville Station, Crawford Co.,	July 23, 1909,	8.1	------	0.68	0.084	Wading measurement just above highway bridge.
Conewango creek,	Warren, Warren County,	Aug. 25, 1908,	900	------	226	0.251	From 5th St. bridge; referenced.
Connoquenessing creek,	Junction Slippery Rock creek, Lawrence County,	Sept. 23, 1908,	412	------	11	0.027	Wading measurement 100 feet above bridge near junction minimum flow.
Connoquenessing creek,	Junction Slippery Rock creek, Lawrence County,	July 17, 1911,	412	------	17	0.041	Wading measurement 150 feet above bridge near junction.
Dunbar creek,	New Haven, Fayette County,	Nov. 19, 1908,	38	------	2.30	0.060	Wading measurement near mouth; minimum flow.

Indian creek,	Indian Creek, Fayette County,	Aug., 1892,	120	------	31.39	0.262	Weir measurement; average daily flow.
Indian creek,	Indian Creek, Fayette County,	Sept., 1892,	120	------	15.21	0.127	Weir measurement; average daily flow.
Indian creek,	Indian Creek, Fayette County,	Oct., 1892,	120	------	12.58	0.105	Weir measurement; average daily flow.
Indian creek,	Indian Creek, Fayette County,	Nov., 1892,	120	------	48.89	0.407	Weir measurement; average daily flow.
Indian creek,	Indian Creek, Fayette County,	Dec., 1892,	120	------	102.83	0.857	Weir measurement; average daily flow.
Indian creek,	Indian Creek, Fayette County,	Jan., 1893,	120	------	193.55	1.613	Weir measurement; average daily flow.
Indian creek,	Indian Creek, Fayette County,	Feb., 1893,	120	------	659.30	5.494	Weir measurement; average daily flow.
Indian creek,	Indian Creek, Fayette County,	Mar., 1893,	120	------	290.46	2.420	Weir measurement; average daily flow.
Indian creek,	Indian Creek, Fayette County,	April, 1893,	120	------	278.01	2.317	Weir measurement; average daily flow.
Indian creek,	Indian Creek, Fayette County,	May, 1893,	120	------	523.48	4.362	Weir measurement; average daily flow.
Indian creek,	Indian Creek, Fayette County,	June, 1893,	120	------	41.35	0.345	Weir measurement; average daily flow.
Indian creek,	Indian Creek, Fayette County,	July, 1893,	120	------	13.13	0.109	Weir measurement; average daily flow.
Indian creek,	Indian Creek, Fayette County,	Aug., 1893,	120	------	13.15	0.110	Weir measurement; average daily flow.
Indian creek,	Indian Creek, Fayette County,	Sept., 1893,	120	------	13.68	0.114	Weir measurement; average daily flow.
Indian creek,	Indian Creek, Fayette County,	Oct., 1893,	120	------	17.07	0.142	Weir measurement; average daily flow.
Indian creek,	Indian Creek, Fayette County,	Nov., 1893,	120	------	31.15	0.260	Weir measurement; average daily flow.
Indian creek,	Indian Creek, Fayette County,	Dec., 1893,	120	------	205.42	1.711	Weir measurement; average daily flow.
Linesville creek,	Linesville, Crawford County,	July 23, 1909,	9.5	------	5.98	0.629	Wading measurement 75 feet below R. R. crossing.
Little Conemaugh river,	Johnstown, Cambria County,	Sept. 25, 1908,	188	------	21.97	0.117	Wading measurement near ball-park; minimum flow.
Little Conemaugh river,	South Fork, Cambria Co.,	Sept. 23, 1908,	95	------	9.4	0.099	Wading measurement 200 feet above forks; minimum flow.
Loyalhanna creek,	Saltsburg, Indiana Co.,	Sept. 24, 1908,	300	------	10.7	0.036	Wading measurement above highway bridge; referenced; minimum flow.
Mahoning creek,	Mahoning, Armstrong County,	Aug. 23, 1908,	424	------	99	0.233	From wagon bridge 250 feet above mouth; referenced.
Mahoning creek,	Mahoning, Armstrong County,	Sept. 25, 1908,	424	------	20	0.047	Wading measurement 160 feet above wagon bridge; referenced; minimum flow.
Mahoning river,	Mahoningtown, Lawrence County,	Sept. 23, 1908,	1070	------	73	0.068	Wading measurement 300 feet below R. R. bridge; referenced; minimum flow.
Monongahela river,	Pittsburgh, Allegheny County,	Oct. 29, 1895,	7340	------	166	0.023	Minimum flow.
Monongahela river,	Pittsburgh, Allegheny County,	Mar. 15, 1907,	7340	35.5	197477	26.904	Surface floats; great flood.
Monongahela river,	Pittsburgh, Allegheny County,	Feb. 16, 1908,	7340	------	127263	17.338	Surface floats.
Monongahela river,	Pittsburgh, Allegheny County,	Feb. 18, 1908,	7340	------	45112	6.146	Surface floats.
Neshannock creek,	New Castle, Lawrence County,	Sept. 23, 1908,	241	------	41	0.170	Wading measurement ¾ mile above Washington St. bridge; referenced; minimum flow.
Neshannock creek,	New Castle, Lawrence County,	July 29, 1909,	243	------	66	0.272	Wading measurement 75 feet below Erie R. R. bridge.
Ohio river,	Beaver Dam No. 6, Beaver County,	Sept. 14, 1908,	22650	1.50	1765	0.078	Gage height at lower gage (Lock No. 6.)
Ohio river,	Beaver Dam No. 6, Beaver County,	Sept. 14, 1908,	22650	1.50	1767	0.078	Gage height at lower gage (Lock No. 6.)
Ohio river,	Beaver Dam No. 6, Beaver County,	Sept. 24, 1908,	22650	0.90	1202	0.053	Gage height at lower gage (Lock No. 6.)
Ohio river,	Beaver Dam No. 6, Beaver County,	Sept. 24, 1908,	22650	0.90	1102	0.049	Gage height at lower gage (Lock No. 6.)
Ohio river,	Beaver Dam No. 6, Beaver County,	Oct. 4, 1909,	22650	1.90	2185	0.096	Gage height at lower gage (Lock No. 6.)
Ohio river,	Brunot Island, Allegheny County,	1867,	19140	0.00	1666	0.087	Gage height at Pittsburgh.
Ohio river,	Davis Is., Dam, Allegheny County,	Oct. 7, 1892,	19420	2.10	2924	0.151	Gage height at Pittsburgh.

Ohio river,	Davis Is., Dam, Allegheny County,	Oct. 8, 1892,	19420	2.00	2558	0.132	Gage height at Pittsburgh.
Ohio river,	Davis Is., Dam, Allegheny County,	Oct. 8, 1892,	19420	2.05	2717	0.140	Gage height at Pittsburgh.
Ohio river,	Jacks Run, Allegheny County,	Dec. 4, 1905,	19420	21.70	237937	12.252	Gage height at Davis Is. Dam.
Ohio river,	Jacks Run, Allegheny County,	Mar. 15, 1907,	19420	34.20	439565	22.635	Surface floats. Gage height at Davis Is. Dam.
Ohio river,	Jacks Run, Allegheny County,	Oct. 30, 1907,	19420	8.90	44050	2.268	Gage height at Davis Is. Dam.
Ohio river,	Jacks Run, Allegheny County,	Nov. 4, 1907,	19420	12.30	104718	5.392	Gage height at Davis Is. Dam.
Ohio river,	Jacks Run, Allegheny County,	Nov. 8, 1907,	19420	13.00	96180	4.953	Gage height at Davis Is. Dam.
Ohio river,	Jacks Run, Allegheny County,	Nov. 12, 1907,	19420	9.00	52740	2.716	From boat held stationary with anchor. Gage height at Davis Is. Dam.
Ohio river,	Jacks Run, Allegheny County,	Dec. 12, 1907,	19420	12.40	101905	5.247	From boat held stationary with anchor. Gage height at Davis Is. Dam.
Ohio river,	Jacks Run, Allegheny County,	Dec. 24, 1907,	19420	16.30	195511	10.068	From boat held stationary with anchor. Gage height at Davis Is. Dam.
Ohio river,	Jacks Run, Allegheny County,	Feb. 6, 1908,	19420	5.70	25832	1.330	From boat held stationary with anchor; heavy ice from Monongahela river. Gage height at Davis Is. Dam.
Ohio river,	Jacks Run, Allegheny County,	Mar. 7, 1908,	19420	18.20	153789	7.919	Gage height at Davis Is. Dam.
Ohio river,	Jacks Run, Allegheny County,	Mar. 19, 1908,	19420	22.60	234352	12.068	From steam launch. Gage height at Davis Is. Dam.
Ohio river,	Jacks Run, Allegheny County,	Mar. 20, 1908,	19420	24.60	241927	12.458	Gage height at Davis Is. Dam.
Ohio river,	Jacks Run, Allegheny County,	Mar. 21, 1908,	19420	17.20	143510	7.390	Gage height at Davis Is. Dam.
Ohio river,	Jacks Run, Allegheny County,	June 2, 1908,	19420	8.70	40828	2.102	Gage height at Davis Is. Dam.
Ohio river,	Jacks Run, Allegheny County,	June 3, 1908,	19420	7.70	31661	1.630	Gage height at Davis Is. Dam.
Ohio river,	Jacks Run, Allegheny County,	June 4, 1908,	19420	6.80	26135	1.346	Gage height at Davis Is. Dam.
Ohio river,	Jacks Run, Allegheny County,	June 5, 1908,	19420	6.00	22202	1.143	Gage height at Davis Is. Dam.
Ohio river,	Jacks Run, Allegheny County,	June 6, 1908,	19420	5.30	20930	1.078	Gage height at Davis Is. Dam.
Ohio river,	Wheeling, W. Va.,	Prior to 1893,	23800	8.50	36260	1.524	From W. B. Report.
Ohio river,	Wheeling, W. Va.,	Oct. 10-13, '92,	23800	1.10	3050	0.128	From 3 measurements at Davis Is. Dam, Pa., and 2 measurements at Marietta, O., by Army Engineers. Left channel, Wheeling side only.
Ohio river,	Wheeling, W. Va.,	Mar. 14, 1905,	23800	14.35	81740	3.434	
Ohio river,	Wheeling, W. Va.,	Mar. 14, 1905,	23800	13.94	77440	3.254	
Ohio river,	Wheeling, W. Va.,	Mar. 15, 1905,	23800	12.37	66280	2.785	
Ohio river,	Wheeling, W. Va.,	Mar. 17, 1905,	23800	10.43	51850	2.180	
Ohio river,	Wheeling, W. Va.,	Mar. 20, 1905,	23800	28.20	229200	9.630	
Ohio river,	Wheeling, W. Va.,	Mar. 20, 1905,	23800	30.80	261900	11.004	
Ohio river,	Wheeling, W. Va.,	Mar. 21, 1905,	23800	38.90	341100	14.332	
Ohio river,	Wheeling, W. Va.,	Mar. 21, 1905,	23800	40.70	354400	14.891	
Ohio river,	Wheeling, W. Va.,	Mar. 22, 1905,	23800	42.05	361500	15.189	
Ohio river,	Wheeling, W. Va.,	Mar. 22, 1905,	23800	42.50	365700	15.366	
Ohio river,	Wheeling, W. Va.,	Mar. 23, 1905,	23800	41.60	336900	14.155	
Ohio river,	Wheeling, W. Va.,	Mar. 23, 1905,	23800	40.30	318100	13.366	
Ohio river,	Wheeling, W. Va.,	Mar. 24, 1905,	23800	35.20	255800	10.748	
Ohio river,	Wheeling, W. Va.,	Mar. 24, 1905,	23800	32.70	227300	9.550	
Ohio river,	Wheeling, W. Va.,	Mar. 25, 1905,	23800	27.20	186100	7.819	
Ohio river,	Wheeling, W. Va.,	Mar. 25, 1905,	23800	25.50	168100	7.063	

Ohio river,	Wheeling, W. Va.,	Mar. 27, 1905,	23800	22.44	149100	6.265	
Ohio river,	Wheeling, W. Va.,	April 13, 1905,	23800	13.06	68380	2.873	
Ohio river,	Wheeling, W. Va.,	April 19, 1905,	23800	7.51	28760	1.208	
Ohio river,	Wheeling, W. Va.,	April 21, 1905,	23800	7.35	27990	1.176	
Ohio river,	Wheeling, W. Va.,	June 1, 1905,	23800	5.20	14640	0.615	
Ohio river,	Wheeling, W. Va.,	Aug. 25, 1905,	23800	5.78	18040	0.758	
Ohio river,	Wheeling, W. Va.,	Aug. 28, 1905,	23800	7.78	31500	1.324	
Ohio river,	Wheeling, W. Va.,	Nov. 1, 1905,	23800	6.20	19800	0.832	
Ohio river,	Wheeling, W. Va.,	May 22, 1906,	23800	5.70	17400	0.731	
Paden creek,	Padanaram, Crawford County,	July 23, 1909,	24	------	6.49	0.270	Wading measurement just below junction with small tributary.
Raccoon creek,	Orphans Home, Beaver County,	Sept. 27, 1908,	184	------	0.97	0.005	Wading measurement; minimum flow.
Red Bank creek,	Brookville, Jefferson County,	Aug. 24, 1908,	333	------	78.1	0.235	Including mill race.
Shenango river,	Manning Bridge, Crawford Co.,	July 23, 1909,	87	------	26.70	0.307	Wading measurement 600 feet below bridge.
Shenango river,	Bridge No. 18, Crawford County,	July 23, 1909,	27	------	2.27	0.084	Wading measurement 10 feet above R. R. crossing.
Slippery Rock creek,	Ellwood City, Lawrence County,	Sept. 23, 1908,	402	------	45.6	0.113	Wading measurement ½ mile above junction with Connoquenessing creek; low flow.
South Fork creek,	South Fork, Cambria County,	Jan., 1906,	6	------	36.2	6.033	Weir measurement 4½ miles south of Beaverdale; average daily flow.
South Fork creek,	South Fork, Cambria County,	Feb., 1906,	6	------	13.6	2.267	Weir measurement 4½ miles south of Beaverdale; average daily flow.
South Fork creek,	South Fork, Cambria County,	Mar., 1906,	6	------	10.1	1.683	Weir measurement 4½ miles south of Beaverdale; average daily flow.
South Fork creek,	South Fork, Cambria County,	April, 1906,	6	------	61.9	10.317	Weir measurement 4½ miles south of Beaverdale; average daily flow.
South Fork creek,	South Fork, Cambria County,	May, 1906,	6	------	9.3	1.550	Weir measurement 4½ miles south of Beaverdale; average daily flow.
South Fork creek,	South Fork, Cambria County,	June, 1906,	6	------	22.9	3.817	Weir measurement 4½ miles south of Beaverdale; average daily flow.
South Fork creek,	South Fork, Cambria County,	July, 1906,	6	------	5.7	0.950	Weir measurement 4½ miles south of Beaverdale; average daily flow.
South Fork creek,	South Fork, Cambria County,	Aug., 1906.	6	------	26.7	4.450	Weir measurement 4½ miles south of Beaverdale; average daily flow.
South Fork creek,	South Fork, Cambria County,	Sept., 1906,	6	------	6.2	1.033	Weir measurement 4½ miles south of Beaverdale; average daily flow.
South Fork creek,	South Fork, Cambria County,	Oct., 1906,	6	------	11.3	1.883	Weir measurement 4½ miles south of Beaverdale; average daily flow.
South Fork creek,	South Fork, Cambria County,	Nov., 1906,	6	------	9.4	1.567	Weir measurement 4½ miles south of Beaverdale; average daily flow.
South Fork creek,	South Fork, Cambria County,	Dec., 1905-06,	6	------	31.7	5.283	Weir measurement 4½ miles south of Beaverdale average daily flow. Mean of Dec., 1905 and Dec.1-15, 1906; includes flood of Dec. 2-6 inclusive, 1905, when the discharge was 128 cubic feet per second.
South Fork Conemaugh river,	South Fork, Cambria County,	Sept. 23, 1908,	62	------	5.5	0.089	Wading measurement 300 feet above forks; minimum flow.

Stony creek,	Johnstown, Cambria County,	Sept. 23, 1908,	465		12	0.026	Wading measurement. Minimum flow.
Tionesta creek,	Nebraska, Forest County,	Feb. 5, 1910,	474		493	1.040	At former gaging station.
Tionesta creek,	Nebraska, Forest County,	Feb. 16, 1910,	474		434	0.916	At former gaging station.
Tionesta creek,	Nebraska, Forest County,	Feb. 23, 1910,	474		788	1.662	At former gaging station; mill race running.
Tionesta creek,	Nebraska, Forest County,	Mar. 2, 1910,	474		6395	13.490	At former gaging station; mill race shut off.
Tionesta creek,	Nebraska, Forest County,	Mar. 7, 1910,	474		8007	16.892	At former gaging station.
Tionesta creek,	Nebraska, Forest County,	Mar. 14, 1910,	474		2116	4.464	At former gaging station.
Tionesta creek,	Nebraska, Forest County,	Mar. 21, 1910,	474		3960	8.354	At former gaging station.
Tionesta creek,	Nebraska, Forest County,	Mar. 28, 1910,	474		2537	5.352	At former gaging station.
Tionesta creek,	Nebraska, Forest County,	April 11, 1910,	474		201	0.424	At former gaging station.
Tionesta creek,	Nebraska, Forest County,	May 7, 1910,	474		1223	2.580	At former gaging station; mill race not running.
Tionesta creek,	Nebraska, Forest County,	June 15, 1910,	474		351	0.741	At former gaging station.
Tionesta creek,	Nebraska, Forest County,	July 13, 1910,	474		299	0.631	Wading measurement 2½ miles above mouth; referenced.
Tionesta creek,	Tionesta, Forest County,	Aug. 15, 1910,	474		76	0.160	Wading measurement.
Tionesta creek,	Tionesta, Forest County,	Aug. 25, 1908,	485		58	0.120	From highway bridge ½ mile above mouth.
Tionesta creek,	Tionesta, Forest County,	Sept. 28, 1908,	485		40	0.082	Wading measurement 900 feet upstream from highway bridge ½ mile southeast of Tionesta; referenced; minimum flow.
Youghiogheny river,	Robbins, Westmoreland County,	Sept. 16, 1908,	1730	—0.10	75	0.043	Gage height at West Newton.
Youghiogheny river,	Robbins, Westmoreland County,	Sept. 23, 1908,	1730	—0.20	73	0.042	Gage height at West Newton; minimum flow.

INDEX

STREAM FLOW DATA

PAGE

Allegheny River—Description of Basin, 643
Allegheny River at Kittanning, Pa.
  Description of station, 725
  Discharge, 726
Allegheny River at Red House, N. Y.
  Description of station, 644
  Discharge, 646
Analomink Creek—Description of Basin, 55
Analomink Creek at Henryville, Pa.
  Description of station, 55
  Discharge, 56
Antietam Creek—Description of Basin, 595
Antietam Creek, near Sharpsburg, Md.
  Description of station, 595
  Discharge, 596
Antietam (Little) Creek, West Branch—Description of Basin, 589
Antietam (Little) Creek, West Branch,
  Description of station, 589
  Discharge, 590
Bald Eagle Creek—Description of Basin, 383
Bald Eagle Creek, at Beech Creek Station, Pa.
  Description of station, 392
  Discharge, 392
Bald Eagle Creek, at Milesburg, Pa.
  Description of station, 384
  Discharge, 384
Black Lick Creek—Description of Basin, 752
Black Lick Creek, at Black Lick, Pa.
  Description of station, 753
  Discharge, 754
Brandywine Creek—Description of Basin, 256
Brandywine Creek, at Chadds Ford, Pa.
  Description of station, 256
  Discharge, 257
Brodheads Creek—Description of Basin, 62
Brodheads Creek, at Analomink, Pa.
  Description of station, 62
  Discharge, 63
Brokenstraw Creek—Description of Basin, 671

- Brokenstraw Creek, at Youngsville, Pa.
  - Description of station, 671
  - Discharge, 672
- Bushkill (Big) Creek—Description of Basin, 48
- Bushkill (Big) Creek, at Shoemakers, Pa.
  - Description of station, 48
  - Discharge, 49
- Casselman River—Description of Basin, 878
- Casselman River, at Confluence, Pa.
  - Description of station, 879
  - Discharge, 880
- Cheat River—Description of Basin, 804
- Cheat River, near Morgantown, W. Va.
  - Description of station, 805
  - Discharge, 807
- Chemung River—Description of Basin, 302
- Chemung River, at Chemung, N. Y.
  - Description of station, 303
  - Discharge, 304
- Chenango River—Description of Basin, 261
- Chenango River, at Binghamton, N. Y.
  - Description of station, 261
  - Discharge, 263
- Clarion River—Description of Basin, 709
- Clarion River, at Clarion, Pa.
  - Description of station, 710
  - Discharge, 711
- Conewango Creek—Description of Basin, 660
- Conewango Creek, at Frewsburg, N. Y.
  - Description of station, 660
  - Discharge, 661
- Conodoguinet Creek—Description of Basin, 506
- Conodoguinet Creek, at Bryson's Bridge, Pa.
  - Description of station, 506
  - Discharge, 507
- Crooked Creek—Description of Basin, 738
- Crooked Creek, at Hilemans Farm, Armstrong Co., Pa.
  - Description of station, 738
  - Discharge, 739
- Cussewago Creek—Description of Basin, 689
- Cussewago Creek, at Jone's Farm, Above Meadville, Pa.
  - Description of station, 689
  - Discharge, 690
- Darby Creek—Description of Basin, 253
- Darby Creek, at Lansdowne, Pa.
  - Description of station, 253
  - Discharge, 254
- Deer Creek—Description of Basin, 578
- Deer Creek, at Churchville, Md.
  - Description of station, 578
  - Discharge, 579
- Delaware River—Description of Basin, 35

- Delaware River, at Lambertville, N. J.
  - Description of station, ... 139
  - Discharge, ... 141
- Delaware River, at Port Jervis, N. Y.
  - Description of station, ... 36
  - Discharge, ... 37
- Delaware River, at Riegelsville, N. J.
  - Description of station, ... 92
  - Discharge, ... 93
- Delaware River, East Branch—Description of Basin, ... 10
- Delaware River, East Branch, at Hancock, N. Y.
  - Description of station, ... 10
  - Discharge, ... 12
- Delaware River, West Branch—Description of Basin, ... 1
- Delaware River, West Branch, at Hancock, N, Y.
  - Description of station, ... 1
  - Discharge, ... 3
- Discharge Measurements (Miscellaneous) 911
- Dunkard Creek—Description of Basin, ... 840
- Dunkard Creek, at "Bobtown," Pa.
  - Description of station, ... 840
  - Discharge, ... 841
- East Branch Delaware River—Description of Basin, ... 10
- East Branch Delaware River, at Hancock, N. Y.
  - Description of station, ... 10
  - Discharge, ... 12
- Frankstown Branch Juniata River—Description of Basin, ... 454
- Frankstown Branch Juniata River, at Huntingdon, Pa.
  - Description of station, ... 455
  - Discharge, ... 456
- French Creek—Description of Basin, ... 695
- French Creek, at Carlton, Pa.
  - Description of station, ... 696
  - Discharge, ... 697
- French Creek, North Branch—Description of Basin, ... 683
- French Creek, North Branch, at Kimmeytown, Pa.
  - Description of station, ... 683
  - Discharge, ... 684
- Juniata River—Description of Basin, ... 486
- Juniata River, at Newport, Pa.
  - Description of station, ... 487
  - Discharge, ... 488
- Juniata River, Frankstown Branch—Description of Basin, ... 454
- Juniata River, Frankstown Branch, at Huntingdon, Pa.
  - Description of station, ... 455
  - Discharge, ... 456
- Juniata River, Raystown Branch—Description of Basin, ... 451
- Juniata River, Raystown Branch, at Saxton, Pa.
  - Description of station, ... 451
  - Discharge, ... 452
- Kinzua Creek—Description of Basin, ... 665
- Kinzua Creek, at Dewdrop, Pa.
  - Description of station, ... 665
  - Discharge, ... 666

Kishacoquillas Creek—Description of Basin, 480
Kishacoquillas Creek, at Kulp's, Pa.
    Description of station, 480
    Discharge, 481
Kiskiminetas River—Description of Basin, 769
Kiskiminetas River, at Avonmore, Pa.
    Description of station, 770
    Discharge, 771
Lackawanna River—Description of Basin, 328
Lackawanna River, at Scranton, Pa
    Description of station, 329
    Discharge, 330
Lackawaxen River—Description of Basin, 19
Lackawaxen River, at Hawley, Pa.
    Description of station, 19
    Discharge, 20
Laurel Hill Creek—Description of Basin, 891
Laurel Hill Creek, at Confluence, Pa.
    Description of station, 891
    Discharge, 892
Lehigh River—Description of Basin, 78
Lehigh River, at South Bethlehem, Pa.
    Description of station, 79
    Discharge, 80
Loyalhanna Creek—Description of Basin, 764
Loyalhanna Creek, near New Alexandria, Pa.
    Description of station, 764
    Discharge, 765
Loyalsock Creek—Description of Basin, 437
Loyalsock Creek, at Forksville, Pa.
    Description of station, 437
    Discharge, 438
Lycoming Creek—Description of Basin, 403
Lycoming Creek, at Bridge No. 2, near Williamsport, Pa.
    Description of station, 403
    Discharge, 404
McMichaels Creek—Description of Basin, 70
McMichaels Creek, at 7th Ave. Viaduct, Stroudsburg, Pa.
    Description of station, 70
    Discharge, 71
McMichaels Creek, at Car Shops, above Stroudsburg, Pa.
    Description of station, 76
    Discharge, 76
Mahoning Creek—Description of Basin, 722
Mahoning Creek, at Furnace Bridge (Dee), Pa.
    Description of station, 722
    Discharge, 723
Mahoning River—Description of Basin, 795
Mahoning River, at Youngstown, O.
    Description of station, 795
    Discharge, 796
Mill Creek—Description of Basin, 748

Mill Creek, at Ben's Creek, Pa.
  Description of station, ... 748
  Discharge, ... 749
Miscellaneous Discharge Measurements, ... 911
Monocacy River—Description of Basin, ... 609
Monocacy River, near Frederick, Md.
  Description of station, ... 609
  Discharge, ... 611
Neshaminy Creek—Description of Basin, ... 156
Neshaminy Creek, near Rushland, Pa.
  Description of station, ... 156
  Discharge, ... 157
Neshannock Creek—Description of Basin, ... 789
Neshannock Creek, at New Castle, Pa.
  Description of station, ... 789
  Discharge, ... 790
North Branch French Creek—Description of Basin, ... 683
North Branch French Creek, at Kimmeytown, Pa.
  Description of station, ... 683
  Discharge, ... 684
North Branch Susquehanna River—Description of Basin, ... 281
North Branch Susquehanna River, at Binghamton, N. Y.
  Description of station, ... 282
  Discharge, ... 283
North Branch Susquehanna River, at Danville, Pa.
  Description of station, ... 356
  Discharge, ... 357
North Branch Susquehanna River, at Wilkes-Barre, Pa.
  Description of station, ... 336
  Discharge, ... 337
Octoraro Creek—Description of Basin, ... 569
Octoraro Creek, at Rowlandsville, Md.
  Description of station, ... 569
  Discharge, ... 570
Oil Creek—Description of Basin, ... 677
Oil Creek, at Rouseville, Pa.
  Description of station, ... 677
  Discharge, ... 678
Perkiomen Creek—Description of Basin, ... 192
Perkiomen Creek, at Frederick (Spring Mount), Pa.
  Description of station, ... 192
  Discharge, ... 193
Pine Creek—Description of Basin, ... 395
Pine Creek, at Waterville, Pa.
  Description of station, ... 395
  Discharge, ... 396
Pocono Creek—Description of Basin, ... 67
Pocono Creek, near Stroudsburg, Pa.
  Description of station, ... 67
  Discharge, ... 68
Quemahoning Creek—Description of Basin, ... 744

Quemahoning Creek, at Stanton's Mill, Pa.
  Description of station, ... 744
  Discharge, ... 745
Rattlesnake Brook—Description of Basin, ... 33
Rattlesnake Brook, at Spring Brook, Pa.
  Description of station, ... 33
  Discharge, ... 34
Raystown Branch Juniata River—Description of Basin, ... 451
Raystown Branch Juniata River, at Saxton, Pa.
  Description of station, ... 451
  Discharge, ... 452
Red Bank Creek—Description of Basin, ... 716
Red Bank Creek, at St. Charles, Pa.
  Description of station, ... 716
  Discharge, ... 717
Schuylkill River—Description of Basin, ... 240
Schuylkill River, at Philadelphia, Pa.
  Description of station, ... 240
  Discharge, ... 241
Shenango River—Description of Basin, ... 779
Shenango River, at Sharon, Pa.
  Description of station, ... 780
  Discharge, ... 782
Shohola Creek—Description of Basin, ... 30
Shohola Creek, at Lords Valley, Pa.
  Description of station, ... 31
  Discharge, ... 31
Spring Creek—Description of Basin, ... 388
Spring Creek, at Bellefonte, Pa.
  Description of station, ... 388
  Discharge, ... 389
Sugar Creek—Description of Basin, ... 704
Sugar Creek, at Wyattville, Pa.
  Description of station, ... 704
  Discharge, ... 705
Susquehanna River—Description of Basin, ... 509
Susquehanna River, at Harrisburg, Pa.
  Description of station, ... 510
  Discharge, ... 511
Susquehanna River, at McCall Ferry, Pa.
  Description of station, ... 554
  Discharge, ... 555
Susquehanna River, North Branch—Description of Basin, ... 281
Susquehanna River, North Branch, at Binghamton, N. Y.
  Description of station, ... 282
  Discharge, ... 283
Susquehanna River, North Branch, at Danville, Pa.
  Description of station, ... 356
  Discharge, ... 357
Susquehanna River, North Branch, at Wilkes-Barre, Pa.
  Description of station, ... 336
  Discharge, ... 337
Susquehanna River, West Branch—Description of Basin, ... 374

Susquehanna River, West Branch, at Allenwood, Pa.
    Description of station, ... 443
    Discharge, ... 444
Susquehanna River, West Branch, at Renovo, Pa.
    Description of station, ... 375
    Discharge, ... 376
Susquehanna River, West Branch, at Williamsport, Pa.
    Description of station, ... 411
    Discharge, ... 411
Swatara (Big) Creek—Description of Basin, ... 548
Swatara (Big) Creek, at Jonestown, Pa.
    Description of station, ... 548
    Discharge, ... 549
Tohickon Creek—Description of Basin, ... 103
Tohickon Creek, at Point Pleasant, Pa.
    Description of station, ... 103
    Discharge, ... 104
Turtle Creek—Description of Basin, ... 845
Turtle Creek, at East Pittsburgh, Pa.
    Description of station, ... 845
    Discharge, ... 846
Tuscarora Creek—Description of Basin, ... 483
Tuscarora Creek, near Port Royal, Pa.
    Description of station, ... 483
    Discharge, ... 484
Tygart River—Description of Basin, ... 822
Tygart River, at Fetterman, W. Va.
    Description of station, ... 822
    Discharge, ... 823
Wallenpaupack Creek—Description of Basin, ... 26
Wallenpaupack Creek, at Wilsonville, Pa.
    Description of station, ... 26
    Discharge, ... 27
West Branch Delaware River—Description of Basin, ... 1
West Branch Delaware River, at Hancock, N. Y.
    Description of station, ... 1
    Discharge, ... 3
West Branch Little Antietam Creek—Description of Basin, ... 589
West Branch Little Antietam Creek, at Mont Alto, Pa.
    Description of station, ... 589
    Discharge, ... 590
West Branch Susquehanna River—Description of Basin, ... 374
West Branch Susquehanna River, at Allenwood, Pa.
    Description of station, ... 443
    Discharge, ... 444
West Branch Susquehanna River, at Renovo, Pa.
    Description of station, ... 375
    Discharge, ... 376
West Branch Susquehanna River, at Williamsport, Pa.
    Description of station, ... 411
    Discharge, ... 411
West Fork River—Description of Basin, ... 831

West Fork River, at Enterprise, W. Va.
  Description of station, ... 831
  Discharge, ... 832
Wills Creek—Description of Basin, ... 635
Wills Creek, at Cumberland, Md.
  Description of station, ... 635
  Discharge, ... 636
Wissahickon Creek—Description of Basin, ... 228
Wissahickon Creek, at Philadelphia, Pa.
  Description of station, ... 228
  Discharge, ... 229
Wyalusing Creek—Description of Basin, ... 320
Wyalusing Creek, at Wyalusing, Pa.
  Description of station, ... 320
  Discharge, ... 321
Yellow Breeches Creek—Description of Basin, ... 541
Yellow Breeches Creek, at Olmsted's Mill, Pa.
  Description of station, ... 541
  Discharge, ... 542
Youghiogheny River—Description of Basin, ... 853
Youghiogheny River, at Confluence, Pa.
  Description of station, ... 866
  Discharge, ... 866
Youghiogheny River, at Connellsville, Pa.
  Description of station, ... 903
  Discharge, ... 904
Youghiogheny River, at Friendsville, Md.
  Description of station, ... 854
  Discharge, ... 855

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